REHABILITATION OF COFFEE SECTOR

RWANDA

DEVELOPMENT OF WASHED PROCESSING WITHIN A FRAMEWORK OF PRIVATE INVESTMENT

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1.0 EXECUTIVE SUMMARY

The coffee industry in Rwanda has passed through a difficult period over the last 7 years, with a sharp decline in both production and quality. The general situation is fairly well known and documented. With the start of the new season in April, 2000, there is increasing private sector activity and competition among exporters, though the world coffee market faces a period of oversupply, with increasing stocks and depressed prices.

The report examines the background of the industry, and the main influences on the quality of production, the current processing facilities and capability, the principal agronomic factors and problems. It addresses questions concerning the options for developing strategies for improving both quality and productivity in the context of the global market, focusing in particular on the primary processing, and improvement in the washing process. The report also outlines the present structure of the marketing system for the coffee, both internal and external.

a. Coffee is one of the **main cash crops** for about 470,000 Rwandan households, and has for many years been the main export earner. Individual holdings are very small, averaging less than 200 trees. Since the early 1990's both production and quality have declined.

b. In a **world market in oversupply**, with lower prices, and competition from other origins, it is of vital importance that both the quality and productivity of Rwanda's coffee be increased, so as to enable the small-holder farmers to maintain their production and income at a viable level.

c. Government policy since 1994 has moved towards the **liberalisation and privatisation** of the coffee industry. Various constraints, such as the export tax, have been progressively removed. Farmers are having to learn to live with a volatile market, no minimum price guarantee, and without the level of support in extension and inputs services which was provided during the previous 30 years. This represents a major change and it is taking time to adapt to this new environment.

d. The report examines the different sectors of the industry, in particular the primary processing of the crop. It looks at **options for improving processing** in the context of a gradual privatisation of existing manual pulping facilities (Centre de Dépulage Manuel – CDM), along with the establishment of a private sector programme for Coffee Washing Stations (CWS) (stations de lavage), with the aim of producing 'fully washed' coffee.

e. The different **risks of an entrepreneur** entering this field are assessed, and proposals set out for providing incentives and assistance to private sector operators wishing to establish coffee washing stations. The critical factors for the success of such a project are also analysed.

f. The report also outlines an intermediate stage, called a **'Mini-Pulping Station'**(MPS). This comes between a full coffee washing station and existing hand-pulping centres (CDM), but with a capacity well above that of the manual pulping centres. The MPS would be based on new technology from Latin America. It outlines a proposal to install five such units on an experimental basis, with a view to replicating them round the country if they prove successful.

g. Since at present over 40% of the coffee is processed using **small drum pulpers** in what might be defined as the 'informal sector', this sector is also examined with a view to upgrading the processing methods in order to improve quality.

h. The **export marketing system** is analysed, and the report examines different options for the future, to optimise returns for investors wishing to produce the fully washed quality.

i. Other factors relating to processing and production are also covered briefly, with some proposals for support for these different sectors:

- research
- the extension services
- nurseries and new varieties
- consolidation of small-holdings
- the role of women in coffee production
- soil erosion control and coffee
- isolation and eradication of potato taste
- institutional framework of the industry, with the changing needs of the liberalised structure.
- use of radio for dissemination of information to farmers.
- establishment of a workshop for the maintenance and rehabilitation of pulpery equipment.

j. Finally an outline is made of **targets** which might be set in place over a 5 - 7 year programme for the industry, with objectives for 2, 5, and 7 years, and criteria for the measurement of the success of the programme. Pilot projects are proposed in each of the key areas covered, which it is hoped may be funded in order to facilitate the implementation of these proposals. In this pilot stage, ownership and management models would be developed in each of the areas, coffee washing stations, privatised manual pulping centres, mini-pulping centres, and improved small drum pulping. It is intended that these provide the basis for the spreading of the technology across the country.

Paragraph 2 of the report summarises the main conclusions and recommendations from the report, and analyses the expected results from the implementation of these recommendations. These have not been aggregated into one project, since the different areas addressed in the report lend themselves better to being handled separately, namely the agronomic/extension aspects, research and development, and then the primary processing under four separate headings - Coffee Washing Stations (CWS), Centre de Depulpage Manuel, (CDM), Mini-Pulping Stations (MPS), and the 'Informal Sector' hand-pulpers. The estimated costs of the different components are summarised in Para.18.

The liberalisation of the internal market is bringing a new dynamic to the coffee sector. It seems that in certain areas farmers are quickly grasping the new environment. One of the prime objectives in these proposals is to provide the necessary incentives and motivation to encourage them to concentrate more on their coffee. By improving the processing and bringing investment closer to the farmers, it should be possible to achieve the goals of improving both quality and productivity on a sustainable basis.

2.0 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

In examining the present state of the industry and the processing capability in the country, various problems have been highlighted. In the preparation of this report, the objective has been to put forward proposals and recommendations with the aims of achieving an improvement in the quality of the coffee, as well as better yields and productivity from the small-holdings, while at the same time seeking private sector solutions to the problems.

Paragraph 18 of the report sets out costs, objectives and goals, and it is anticipated that the implementation of these recommendations should over a period of 2, 5, and 7 years provide a significant and measured improvement in the farmers' incomes from coffee, as well as the country's foreign exchange earnings from this important crop. The principal recommendations are as follows:

2.1 PRIVATISATION OF CENTRES DE DEPULPAGE MANUEL (CDM) (CAPACITY 10–20 TONNES/SEASON)

There are about 1900 CDM in the country, of which an estimated 1400 operational. These are owned and maintained by OCIR Café, though they have inadequate resources to cover the whole country. OCIR Café has started the process of selling these to farmer grous or Associations. In order to improve performance on a sustainable basis, it is recommended to privatise all of the CDMs, by selling them to a small group of farmers round each unit. It is recommended that initially a limited number of CDM in a specific zone be selected, say 100 in all, in order to develop and test different models for this privatisation over a 12 – 24 month period. As the system is seen to work, the programme can be extended to the remaining CDM, with a view to their being entirely privatised within a 5 – 7 year period, possibly shorter.

2.2 COFFEE WASHING STATIONS (CWS) (CAPACITY 200-250 TONNES/SEASON)

There exist already 2 CWS, one at Nkora near Gisenyi and the other at Masaka near Kigali. Nkora has been sold to a Co-operative, and they started to operate in April 2000. First samples were available at the time of this study, and the quality results was most encouraging. This will provide a test of the market potential and premium for this type of coffee. Masaka is in course of privatisation. In addition two new CWS are being constructed by private operators, both exporters. These should start to operate next season.

Given the cost of establishing a new CWS, the risks involved in financing such an operation, as well as in the ongoing management, it is not certain that private sector operators will be able to operate and maintain these stations. Much will depend on the premium to be achieved in the sale of the fully washed coffee. Since the initiative to increase production through CWS depends on the profitability of such operations, it is likely to take time before private operators are satisfied as to the economic viability of such operations.

It is recommended that some finance be sought, initially to be made available for the construction of new CWS by private operators. The funds to be made available through the

commercial banking system, but in Rwanda Francs with a subsidised interest rate (say 6%).

In other countries which have successfully started CWS programmes, these have almost always been supported by heavy public sector subsidies. The management, market and other risks in the programme in Rwanda are being carried entirely by the private sector. Therefore in addition, it is recommended to make available some technical assistance in areas of management, quality and marketing to the private sector operators who enter this field.

2.3 MINI-PULPING STATIONS (CAPACITY 50-80 TONNES/SEASON)

There is new machinery from Latin America which scales down the size of an individual pulping station, and this becomes much more accessible to the small to medium operator/investor. This new technology is relatively simple, and also requires much less water than traditional CWS. However until it is seen how this performs in the local context, investors will be reluctant to enter this field, despite the quality and therefore value gains which can be achieved. It is recommended therefore that OCIR Café import five of these new machines, with a view to setting them up as demonstration units in collaboration with either individual business-men or else producer groups in specific areas. Once they are seen to be viable, it is expected that within a short period, private sector operators will start to import the machinery. This would bring about a significant quality improvement.

2.4 OCIR CAFÉ STRUCTURE

The GOR has already approved the restructuring scheme of OCIR Café, and the appropriate legislation has been tabled to put this into effect. There have in recent years been reports written (details in bibliography) which have addressed the issues related to the restructuring of OCIR Café. It is beyond the scope of this report to go into the detail of this subject, though clearly the future structure of OCIR Café will have a considerable influence on the industry, as the privatisation process progresses. The recommendations in the earlier reports need to be adapted to the new realities of the coffee industry, but this could be done within a short period. The main issues relate to the separation of the commercial functions of the organisation from the regulatory and industry supervision functions, such as quality certification, licencing, statistics, and liaison with the research and development institutions.

2.5 OTHER RECOMMENDATIONS

The report includes other recommendations concerning:

- **Improvement of varieties** available for replanting. It is estimated that about 30% of the crop is lost each year because of the impact of leaf-rust. Effective chemical control is virtually impossible with the wide dispersion of small-holdings. New resistant varieties are very important therefore for improved productivity.
- **Assistance to research** institutions to move forward in their work on coffee, especially the disease resistant and improved varieties, as well as testing of processing technologies.
- Potential for use of **coffee in erosion control** programmes
- **Assistance to womens' groups** in coffee production, since 24% of coffee farms are owned and managed by women. This also has potential as a marketing niche

overseas.

- Further work to **eliminate the 'potato taste'**, which alone probably accounts for a reduction in value of the crop by about 10%.
- Development of **radio programmes** as a means of extensive and rapid dissemination of information to growers.
- The establishment of a workshop with the capability of reconditioning pulper discs and repairing coffee machinery.

2.6 CONSOLIDATION OF SMALL-HOLDINGS

There is increasing competition for good land, as population growth increases food demand. According to the 1999 National Coffee Census, average coffee holdings are about 150 – 170 trees per farmer. It is very difficult to make these truly productive. Under a programme organised by World Vision, experience at Gikongoro with potato producers has shown that consolidation of holdings has had a dramatic effect on improving farmer incomes and productivity. This can only be achieved provided farmers willingly co-operate to do it, and it is in small groups around 5, but maximum 10 farmers. Once one group is seen to achieve results, the idea rapidly catches on.

In an increasingly competitive coffee world, improved productivity and quality are vital for survival. It is recommended that a scheme be put in place to test this in the field, and the report outlines how such a scheme could be stared. This is closely linked to possible developments in the extension section of OCIR Café, and it is recommended that assistance be sought for the technical support from World Vision, with a proven track record in this field, to bring this part of the programme forward.

2.7 TARGETS AND OBJECTIVES

The report sets out specific 2, 5, and 7 year targets for the various areas covered, with a view to achieving concrete and measurable results in all the areas covered. (see Para. 18.3). It should be noted that the establishment of a sector to produce fully washed coffee, undertaken as it will be by private investors, will take longer than that which might have been achieved if large sums of finance were available for immediate investment. The preliminary targets are, therefore, modest in their scale, but reflect what is believed to be a sustainable and achievable level of production of improved quality.

Once the initial stage has been proven successful, it is expected that subsequent stages will move much more rapidly. If the recommendations set out in this report are adopted, and the finance is available within a reasonable period, it is anticipated that the following results should be achieved:

a. Support in training, management and marketing to existing CWS which should ensure their sound establishment and development to produce 800 – 1000 tonnes of fully washed coffee within 2 years. It is recognised that this is a very modest quantity, but since it falls to the private sector to make the investment, the economic viability of the CWS must first be proven It is expected that within the first 12 – 18 months it should become clear what premiums may be expected from the fully washed coffee. Improved value of 1000 tonnes

fully washed estimated at $ 440,000. (20 cents/lb on 1000 tonnes)

b. Provided premiums justify the investment and risk, establishment within 2 – 3 years of 5 further CWS, which together with the existing facilities should increase production of fully washed coffee to 2000 - 2500 tonnes per year, improving export values by over US$ 1 million per year.

c. Technical documentation and information available to private sector investors through OCIR Café on CWS design, management and control systems, as well as small MPS units. This should facilitate access into these fields by entrepreneurs willing to invest.

d. Establishment within 2 years of 5 MPS producing around 250 tonnes per year of fully washed coffee. This will permit the testing of this system, both for local production conditions, as well as to establish market values and premiums which may be obtainable. Estimated improvement in value of these 250 tonnes $ 66,000. (12 cents/lb on 250 tonnes). Again it should be noted that once established, it is anticipated that there would be a rapid growth in the number of these MPS units installed and operational within the country, increasingly significantly the quality and value of production.

e. Privatisation within 2 years of 100 CDM units, with the establishment of Common Interest Groups (GIC) or Associations to own and manage them. The objectives will be not just to improve management and quality from these units, but also to stimulate improved productivity by closer contact with the farmers. Estimated improved value of coffee from these improved units US$100,000/year. (4 cents/lb on 1200 tonnes). Once again, the purpose of the first stage would be to establish the model and pattern for such privatisations, with a view to the subsequent privatisation of the remaining units within a 5 year period thereafter.

f. Import and sale of 100 'Baby Bentall' drum pulpers, to start the task of improving quality of production from the informal sector.

g. Training in liquoring and quality control of OCIR Café staff, as well as quality control staff from exporting firms. Training in agricultural practice, pruning, mulching, plantation maintenance etc. of the agricultural staff of OCIR Café, so as to provide a better service to farmers.

h. Assistance to women's groups involved in coffee production.

i. Test of a system for consolidation of small-holdings over a 3 year period, to establish if this could be a viable means of improving yields and productivity as has been achieved in other crops.

j. Assistance to ISAR for the expansion of their plant breeding and improvement activities. Also the rehabilitation of the CWS at the research station, to be used as a test installation for developing systems and procedures for use in the industry.

k. Radio programmes to facilitate the dissemination of information to as wide an audience as possible of coffee growers in the country.

l. Study of the potato taste, it is to be hoped in conjunction with neighbouring countries facing the same problem, and the development of a programme to reduce its incidence. If this is successful, and a programme is established, the revenue improvement for Rwanda could be as much as 10% of the value of the entire crop, and could have a similar impact on neighbouring countries.

m. Establishment of workshop with private sector control for purposes of reconditioning and rehabilitating coffee pulping machinery. This should considerably reduce maintenance costs of pulperies, and improve operating efficiency of the units, both large and small.

If these recommendations therefore can be implemented, (and the scale of the proposals is at a pilot level in all cases), the net benefit to Rwanda would be well over US$ 1 million per annum

within a 2 – 3 year period, and this on a sustainable basis, and increasing thereafter. Once the results from this level of investment were established, it is expected that private sector investment in improved processing would escalate rapidly, provided the general economic and investment environment is positive.

2.8 COMPARATIVE RESULTS – FULLY WASHED COFFEE – BURUNDI

In considering the above premiums, it is of interest to note the comparative results of the Fully Washed Coffee from Burundi compared to their normal production. In the 1999/2000 season, for the figures up to early May 2000, the results are as follows: (See Appendix I)

18,057 tonnes of Fully Washed Coffee sold average price	FBU1,063.96/kg
9,932 tonnes of Washed Coffee sold average price	FBU 800.14/kg
Premium for all fully washed compared to washed therefore	FBU 263.83/kg
	= approx USCents 19.00/lb

(prices ex auction, Bujumbura)
(Source*: Office du Café du Burundi, Bujumbura*)
(FBU 263.83/kg at an approximate average rate of exchange for this season of say FBU 6.25/US$ this gives an average premium for all the Fully Washed of US Cents 19.00 per lb.)

Whether this premium would be sufficient to justify private sector investment in Coffee Washing Stations is questionable. The actual cost of operation, assuming a generally low price environment, is US$ 398 per metric tonne (see Appendix IX). A premium for all qualities together of 19cents/lb is equivalent to $418 per tonne. The factors which remain to be clarified are:

a. The price for the purchase of cherry from growers, since this will largely determine the viability or otherwise of the CWS. Since the grower price of cherry will be fixed ultimately by market forces, it remains to be seen whether the CWS will be profitable.

b. The decline in world markets will probably result in a realignment of differentials for washed arabicas. The cost of production of this type of high quality coffee will eventually result in the finer grades, including the fully washed Rwanda coffees, selling at a premium to the New York market. There will be a period of uncertainty over 6-24 months while these new price relationships are established.

The Burundi figures may not be a reliable comparative guide as to the premiums which might be achieved from fully washed Rwandan coffee. We were advised that the percentage of the finer qualities in Burundi this season had been lower due to internal problems. There is little doubt that the production of an improved quality of Rwandan coffee would be beneficial to the country in terms of overall foreign exchange revenue and improved marketability of the crop. However it is not yet clear whether the individual entrepreneur will be able to rationalise the investment, given the risk/reward potential from the production of fully washed coffee through CWS.

However it seems highly probable that using the intermediate technologies of the Mini-Pulping Stations, the investor could make a significant return, justifying the investment and risk, and bringing almost the same benefit to the country.

3.0 BACKGROUND

3.1 COFFEE IN RWANDA'S ECONOMY

Coffee has traditionally been the major export earner in Rwanda's economy, in some years reaching well over 70% of total exports. With the decline in production in the mid-1990's and the increase in tea production, coffee still represents around 50% of exports. It is estimated that over 400,000 growers produce coffee, and the average number of trees per grower across the nation is 152 (National Coffee Census, June 1999). At the same time as production has declined, quality has also declined. In 1989 on average 100 kgs of parchment produced 74 kgs of green coffee. In 1999, 100 kgs of parchment produced only 68 kgs of green coffee. In contrast in Kenya and Burundi, 100 kgs of parchment produces on average about 80 kgs green coffee.

3.2 NOUVELLE POLITIQUE POUR LE CAFE

In 1998 the Government, through OCIR Café, defined a new coffee policy, which has set out specific objectives for the years 2000 - 2005. This policy document was adopted by the GOR in March 1998, and OCIR Café is working along the lines set out in that document, as well as the Plan of Action 2000 - 2005.

Among the provisions in this policy, one of the key items is the identification of 77 Communes where coffee production is best suited, and on which OCIR Café is concentrating its attention and efforts. Inputs supply and extension service support are to be focused on those Communes

3.3 CONTEXT OF GLOBAL OVERSUPPLY

The world coffee market has been on the defensive for the last 15 months, facing a growing production and thus oversupply position. Unless there is a climatic problem in Brazil during 2000 (be it frost or drought), their 2001/2002 crop looks likely to exceed 40 million bags, which could leave the world with a production surplus of nearly one million tons of coffee for that year. Growing stocks in consuming countries are already weighing heavily on prices, a trend which seems likely to continue in coming months.

Rwanda's coffee has advantages of intrinsic quality/value, climate and growing conditions. It is of the quality (washed arabica) sought after by the market, and production and labour costs are low. Offset against this are the high transport costs to shipment ports. There are few alternative cash-crops, so coffee is likely to remain an important component in the agricultural economy. However with a population growth currently estimated at 3.7%, there is increasing pressure for good land, which will keep up competition for agricultural land and resources. This underlines vital need to make farms more productive and efficient, and to aim at improvement in the quality, and hence value, of the crop.

3.4 EXISTING REPORTS AND STUDIES (SEE BIBLIOGRAPHY)

There have been many studies made of Rwanda's coffee industry, and a list of the some of these is included in the bibliography on Page 55. A very thorough Census of the industry was published in 1999, sponsored by OCIR Café.

Although there have been numerous reports, implementation has been at times difficult due to the general situation in the mid-1990's in the country. However certain key elements have been put into effect, and the industry has been progressively liberalised during the past 5 years. The result is that for the 2000 season, there is an active and competitive internal market, with four well established and well financed exporters competing to buy the parchment coffee from growers.

3.5 MARKET MECHANISM IN RWANDA

From early days, Rwanda's coffee industry was managed under the control of OCIR Café, with grower prices, inputs supply, extension services, and central pulping arrangements all falling under the control and patronage of OCIR Café. Because of this history, there is lack of familiarity with market mechanism and potential impact as it starts to operate (though in 1997 the farmers did very well thanks to competition among exporters).

The new-crop season starting in April 2000 is one of first where competition is really operational. The reasons for this are:

a. There are at least four serious exporters in the market, (a list of these is set out in Appendix XIII)

b. The GOR took the decision in 1998 to eliminate export taxes on coffee, in order to ensure that Rwandan exporters would be able to pay fully competitive prices to producers. The export tax had been a distorting factor during the years 1995 - 1997, creating uncertainty for exporters and making real competition difficult.

At the beginning of the crop season in April, 2000, the market was adjusting to the new environment, and prices were realistic based on real costs. A weekly meeting was being held between OCIR Café and the exporters/usiniers, and producers/associations, to discuss the minimum indicative price for parchment coffee for the week following. The standard costs of operations within the local market had already been determined and agreed at the beginning of the season, and were set out in the 'echelle mobile', a copy of which is to be found in Appendix XIV.

The priority, in the short-term was to allow the market to do its work, ensuring sure that all the players were truly free to operate, and to evaluate the results as the season progressed. Results of liberalisation might at times appear to be untidy, but gradually the market would straighten itself out - though not without pain to some players, notably the inefficient.

3.6 PRIVATISATION

The government's policy of privatisation has had an impact in the coffee sector, as increasingly the operators, from usiniers/exporters down to the growers themselves, are left to work out the best way of handling their affairs without intervention.

Up to 1994, the GOR operated a system of a 'filière administrée' – an administered market.

The grower price for parchment was fixed at the beginning of the season, and was held at that level throughout the period of the crop. The coffee was purchased by the 'usiniers' and their agents, and processed for export. Exports were handled mainly (about 90%) by Rwandex, a company majority owned by the GOR, but largely managed by the private sector shareholders. The only other licenced exporter was the company Etiru, which handled about 10% of the volume.

After 1995, the Government decided on the new policy of liberalisation, and during the following 2 years, there were several firms which established themselves to process and export coffee. Of these new entrants, two were linked to international coffee groups. In 1998 one of these two withdrew from the market, selling its processing facility to a Rwandan investor. One or two of the smaller exporters discontinued their operations during 1998 and 1999. Thus at the start of the season 2000, there were four exporters who were active in the market. (Appendix XIV).

The GOR policy of liberalisation has a direct bearing on the establishment by private firms and individuals of coffee washing stations/stations de lavage (CWS), and investment in this primary processing in the coffee sector. In order to achieve a reasonable volume of production of this improved quality, it may be necessary to find appropriate ways to give some indirect assistance in the start up stages. The private investor faces considerable risks in setting up the improved processing facilities. The potential returns are discussed in this report. In the long-term the CWS will need to be shown to be viable and thus sustainable, thus it may take a little time while this is established before large new investments take place in CWS.

3.7 FINANCIAL AND INVESTMENT ENVIRONMENT

There is only a limited supply of long-term credit in the local market. Mainly it is EIB (European Investment Bank) funding which is available, in dollars, and the terms generally are for a rate of interest of around 12% per annum, with facilities being fully secured. This usually requires the borrower to provide security beyond that which would be available from the funding covered by the investment to be made, and adds a significant additional burden on the investor.

This is a disincentive to rural investment due to high risk and uncertainty over returns. If private investment is to be made in improved primary processing, there is a clear need to establish a line of credit for this purpose.

It is recommended that in the long-term a significant line be sought for channel through the commercial banks, possibly from World Bank, IFC or similar sources. In the meantime it is proposed that, with the terms of the project proposed within this report, that a certain amount be made available as soon as possible in order to establish and test a system for such financing.

The line of credit would be established through a commercial bank, possibly the Banque de Developpement du Rwanda. This fund to be available to private investors in FRW, on a 6 year term with one year's grace period, at a rate of interest of say 6 - 8% p.a. Security for the advances would be the CWS installations themselves. Para.10 deals with this in further detail.

3.8 ASSOCIATIONS

Since the 1980's, the Government has encouraged the formation of Associations of farmers. At the IWACU Farmer Training Institute in the early 1990's they counted as many as 200,000 associations. It seems at that time farmers were encouraged to form an association in order to obtain some help – 'associez-vous, on va vous aider' - but without there necessarily being a real reason for associating. In 1999, IWACU received information and requests from 790 associations, and in most cases these had a genuine 'raison d'être'. However the staff at IWACU emphasised that if there is a cause for working together ('conjugaison de travail'), then farmers are willing to do so. This is widely accepted among farmers, though the concept of Co-operatives seems to be less known.

It appears, from the information received, that the Associations which do exist are visible mainly at the Commune level, but going down to sector and as far as cell level, they are increasingly remote. For Associations to work, the common goal and purpose need to be communicated. Farmers need to know why they should work together. Where the rationale exists, they will do so – as they have always done (eg helping cultivate each others' fields etc).

Concerning their legal structure, Associations are given recognition at Commune level, an 'Attestation de Reconnaissance'. This provides a legal framework for their operations during an initial period. The intention is that after about two years they be converted into Co-operatives. There is a danger with Associations as presently constituted that they form a pyramid structure, which may move away from the needs of the farmers at the lower levels. This has been the experience with co-operatives, and in particular the co-operative unions in some neighbouring countries, and the results have had a negative impact on coffee production.

IWACU has been doing research on local 'Comité de Développement', and seeking to identify specific projects for these to be working with. The CDMs could well provide a useful focus in this area.

The key would appear to be to keep the organisations fairly small, so that there is a strong relational dynamic among members. This is particularly so among the members of the GIC, (Common Interest Group) rather than full commune level associations.

3.8.1 Financing of Associations

In 1999 there were 6 Associations which received financing. They received a small amount of crop finance from a local bank, the Union de Banques Populaires, in addition to receiving inputs supplies from OCIR Café on credit.

The bank loans were guaranteed by OCIR Café, and by the end of the 1999 season all the Associations repaid their bank loans. There were some inputs supply credits from OCIR Café to these associations which remained outstanding. In 2000, the number of applicants for loans had increased to about 40, and these were being processed by the UBP and OCIR Café

at the time this study was being carried out.

An interview with one of the private exporters showed that he had made arrangements with over 50 Associations for the supply of coffee for the 2000 season. Advances had been given by the exporter to a few Associations in the 1999 season and for a short period, with positive results. The exporter had therefore gone ahead for the 2000 season to work with a wider network of Associations, providing some limited pre-finance, and making arrangements for the purchase of their coffee.

4.0 COFFEE INDUSTRY PERFORMANCE

The decline in the performance of the Rwandan Coffee Industry during the past 12-14 years and the impact on the economy is detailed in several documents as well as in several reports by the Office de Café. Some of these are listed in the Bibliography on Page 55. The sharp decline in production has been accompanied by a parallel decline in coffee quality.

4.1 PRODUCTION AND QUALITY DECLINE

Figures for production and quality are as follows:

Year	1987	1989	1990	1998	1999	2000 (est)
Production (Tons)	43.026	29.340	42.403	14,400	18,200	19,000
"Standard" %	40	2	3	8	5	10
"Ordinary" %	60	98	97	92	95	90

Source: OCIR Café

4.2 FACTORS INFLUENCING QUALITY

Experience in the production of washed, mild arabica which is the type of coffee produced in Rwanda, shows that the quality of the marketed product derives mainly from three sources:-

Agronomic factors — Climatic conditions; varieties grown and cultural standards. These account for about 40% of the quality characteristics.

On Farm Processing — Methods followed for pulping, fermenting; washing, drying and storing of parchment coffee. These account for about 40% of quality characteristics.

Export preparation — Milling, grading, sorting and presentation to the market. These account for about 20% of the quality characteristics.

Quality in short is mainly determined at farm level. For Rwanda the decline in coffee quality is in fact linked to both agronomic factors and on farm processing problems.

4.3 AGRONOMIC FACTORS LINKED TO QUALITY

The production of Rwanda coffee is 100% a smallholder industry growing traditional Bourbon

varieties which are very susceptible to fungus diseases. The majority of the smallholder growers have a long experience of growing coffee but agronomic standards vary enormously from very good to very poor. Field visits revealed that as a general rule clean weeding, basic pruning and mulching are found in the smallholder plots which is a "plus" for the quality of the cherry produced. In some smallholder plots seen in Cyangugu, Kigali and Gisenyi the field standards compared very well with those of Kenya. However several problems persist which affect quality:-

- Fungus disease (Leaf Rust and to a lesser extent Coffee Berry Disease) is one major factor which reduces yield and quality in Rwanda coffee. All coffee seen had been affected by serious leaf fall and die-back resulting in small, poorly formed cherries often with "shrivelled" beans. Coffee Berry Disease has affected certain zones causing die-back and disease damaged beans. The control programme of fungicide sprays is not practised and indeed seems beyond the resources of most smallholders. Some estimates put the loss of crop due to this factor alone as high as 30%. Given the impracticality of an effective spraying programme (for control there is needed at least 7 rounds of spraying during the year, and possibly more according to the rains), the only solution for this is the long-term replanting with disease resistant varieties.
- Shortage of disease resistant varieties.
- Pruning cycle going to 9-10 years.
- Insufficient and often no mulching leading to a high percentage (20%-30%) of lights in the parchment coffee - a well known problem with Rwanda coffee.
- Insect attacks, mainly Antestia bug, which cause damage to the beans and require an insecticide programme again beyond the means of the smallholder grower.
- Low application of mineral fertilisers.
- A factor here is that farmers have been used over the years to receive "free" inputs including fungicide, insecticide and fertilisers which is now being discontinued.
- An estimated 20 – 25% of the trees are over 30 years old.

The end result of the constraints outlined above is a raw material (coffee cherry) which produces parchment coffee with a high percentage (20-25%) of diseased, defective and light beans with a lower intrinsic quality.

The current Action Plan designed by OCIR Café includes a programme of regeneration for old trees; support for extension; support for Research; credit systems; expanded use of mineral fertiliser. The result envisaged is improved production in the Project area reaching 27,000 tons by the year 2005. A parallel gain would be a better quality of raw material and hence a better quality final product.

The practical experience of the consultant in coffee production indicates that this Action Plan will have a bigger impact if there is specific support for a replanting programme with emphasis on the multiplication of the most promising disease resistant hybrids available at ISAR. Among the breeding plants available at ISAR are the following:-

Hybrid type	**Consultant's Experience**
Ruiru 11 (200 mother plants)	High resistance to leaf rust and CBD; high yield; medium to good quality. However the few plants in Rwanda were grown from seed, and some CBD has been found on the plot at ISAR

	early in 2000. In Kenya vegetative propagation is used.
Catuai (6,000 seed bearers)	Resistance to leaf rust and CBD; high yield; fair to medium quality.
Catimor (300 seed bearers)	Resistance to leaf rust and CBD; high yield; fair quality.
POP (2,700 seed bearers)	Blue Mountain arabica; some Resistance to leaf rust and CBD; medium high yield; acceptable quality.
Caturra (4,000 seed bearers)	Poor resistance to leaf rust and CBD; fair quality.
BM139	Some resistance to leaf-rust and CBD, good yield, acceptable quality.

A component for Research support has therefore been included in the this proposed Project for quality improvement.

5.0 PROCESSING CAPACITY - HAND-PULPING SYSTEMS

Hand-pulping systems are the norm in Rwanda. Reports which were reviewed by the consultants cover the traditional single-disc pulperies distributed throughout the coffee zones, known as 'Centre de Dépulpage Manuel' or CDM. They also mention other methods - portable drum pulpers and local made copies. In fact the field trip revealed that there are 4 hand-pulping methods in use:-

1. Traditional single disc hand pulpers (CDM)
2. Portable Drum Pulpers
3. Locally made copies of the portable drum pulper.
4. Pestle and mortar system

5.1 SINGLE-DISC HAND PULPERS (C D M)

For some 30 years OCIR has been responsible for the supply and maintenance of traditional pulperies (CDM) throughout the coffee zones. It is estimated that there are about 1,380 operational in the main coffee zones (77 communes) which have been retained for the Rehabilitation Project, with a further approximately 500 in other areas or non-operational. Each has a capacity of about 400 Kg cherry per hour. Actual performance in the field appears to be in the region of 200 Kg cherry per hour only, due to poor maintenance, particularly the lack of reconditioned discs. Observations made and information received in the field indicated that about 58% of the crop is processed through these traditional pulpers (Table 1).

5.2 PORTABLE DRUM PULPERS

These have a capacity of about 150 Kg cherry per hour. They were officially and widely used up to the 1980's but went out of favour when the single disc pulper was preferred. Since then the portable drum pulpers have been discouraged by the Office Des Cafés. This type of pulper appears to have a capacity of about 150 Kg cherry per hour and many still continue in use. Observations made and information received indicates that there are at least 2,000 of these

pulpers still functioning in the main coffee zones (77 communes) account for about 17% of production. Some are carried round on a bicycle by entrepreneurs who offer a pulping service at a fee (generally paid in coffee). This type of pulping seems to be convenient to farmers who are in many cases a long way from the nearest CDM or in the event that the disc pulpers are broken down or overloaded. One attraction for the farmers is that the portable drum pulper requires less water than the disc pulper in order to pulp cherry.

5.3 IMITATION PORTABLE PULPERS

The ones seen in the field appear to have a capacity of about 80 Kg cherry per hour. Information received indicated that there are at least 2,000 of these local made copies of the small drum pulper accounting for about 10% of all production. They function in a similar way to drum pulpers with a lower capacity but with a tendency to spoil a percentage of the beans. Hence they are strongly discouraged.

5.4 MORTAR AND PESTLE SYSTEM

Farmers with no access to a pulper of any kind use a simple system of pulping between two stones or on a wire mesh tray. It is estimated that this accounts for the remaining 14% of pulping.

Regardless of the method used for pulping all the wet parchment coffee is fermented, washed and dried on farm by the growers themselves.

Distribution of Processing Systems (Project Zone)

	Washing Station	Disc Pulpers	Drum Pulpers	Imitation Drum	Pestle System	
Existing number	2	1.380	2.070	2.102		
% of Crop	1%	58%	17%	10%	14%	(100%)

From Table 1

Source: Office des Cafés and Consultant's Estimates

6.0 CENTRAL WASHING STATION SYSTEM

Experience in Kenya, Tanzania, Ethiopia and Burundi shows that where the management is efficient the quality of the coffee from a central washing station is appreciably higher than for hand pulped coffee. This coffee usually referred to as "fully washed" generally achieves price premiums in the market. Only 1% of the Rwanda coffee output is processed in central washing stations. Of the two existing stations, the one at Nkora is producing a limited quantity during the 2000 season, the other, at Masaka near Kigali will probably only be operation for the following year. There are in addition 3 new stations being constructed near Cyangugu, but these are expected to be operational only by the very end of the 2000 season.

6.1 MASAKA CENTRAL WASHING STATION

This central washing station has been non-operational for 3 years and is in final stages of being privatised. The station is similar to the Burundi pulpery model and has the basic range of wet processing equipment for fully washed coffee viz:-

Main water tank
Cherry hopper
One pulper, pre-grader and repasser processing line (chaine de dépulpage).
Fermentation tanks
Washing-grading channel
Soak tanks
Drying tables (170)
Coffee store (100 tons parchment)

The washing station requires rehabilitation to supply the shortfall in facilities and upgrade the layout in order to avoid operational problems affecting efficiency, costs and quality:-

1. Absence of ventilated storage bins. This renders the washing station liable to congestion at peak processing periods during April/May/June thus affecting overall quality control and lowering the price premiums.
2. Inadequate pulp separation (a pit rather than the normal tower) with the danger of pollution.
3. Absence of a re-circulation system entails large consumption of water adding to the operating cost and danger of pollution.
4. Absence of wet parchment delivery system and hoppers. This increases the operating costs and lowers the potential price to farmers.
5. Shortage of cherry in the area of the washing station - about two thirds of the cherry has to be transported. This adds to operating costs and lowers the potential price to farmers.
6. The water supply depends on the local municipal water and has broken down.
7. The previous lease-holder may have miscalculated costs and conversion ratios for a central washing station.
   The nominal capacity is 150 tons parchment. If full rehabilitation is done the capacity would be about 300 tons parchment per year.

This washing station is in the process of being privatised and is hoped may be in production by the end of this season. Full rehabilitation (Table 7) would cost about US$18,400 and enable the production of about 300 tons parchment annually. However about 80 tons could be produced immediately this year if a minimum of rehabilitation is done at a cost of US$ 5,800 (Table 7). Production for this washing station is therefore estimated at 80 tons for the year 2000 season.

6.2 NKORA CENTRAL WASHING STATION

This washing station has been non-operational since the 1994 season. Ownership passed from the Office des Cafés to the UPROCA Co-operative in April 1999 and the pulpery is expected to be in production again by April 2000. Rehabilitation is under way but additional expenditure is needed to supply the shortfall in facilities and improve the layout. Complete rehabilitation works would require:-

1. Ventilated storage bins. Currently the washing station uses 380 drying tables whereas only about 120 tables are required to produce 500 tons where ventilated bins are installed. Without ventilated bins the washing station is liable to congestion at peak processing periods during April/May/June thus affecting overall quality.
2. Drying Tables The majority of tables have collapsed. Rebuilding with an all timber framework is advisable.
3. Drying materials Most of the drying cloth and PVC cover needs replacement.
4. Wet parchment transport A delivery system for wet parchment is advisable so as to reduce the high use of labour.
5. Several other repairs are needed including:
   Mini-hydro repairs (main shaft)
   One soak tank.
   Reconditioning discs and chops (machoires).

The capacity of this washing station in its present condition is about is about 350 tons parchment, but at very high operational costs. If full rehabilitation is done the capacity would be about 600 tons parchment coffee at much lower costs. Full rehabilitation is estimated to cost US$32,600. The minimum rehabilitation required is about US$10,900 which would permit a production of about 80 tons parchment. The UPROCA Co-operative has estimated to do the minimum rehabilitation and production for the year 2,000 has been estimated at 76 tons parchment. Operating costs are estimated at US$112,000 including the parchment trading operations.

Financial problems are the main obstacle to the rehabilitation of this washing station. UPROCA relies on bank credit for its present parchment buying operations and has applied to the local bank for a longer term loan to rehabilitate the pulpery. Up to now the bank credit obtained has been guaranteed by the Office des Cafés. For the year 2000 coffee season the required guarantee has not yet been received.

6.3 MWITO NEW WASHING STATION (CYANGUGU)

This site has been well chosen with plentiful supply of water and a large production of coffee in the immediate area. The owners, SICAF, have estimated the initial capacity at 250 tons parchment with production starting in April 2000, though this has subsequently been delayed due to late arrival of some equipment.

This central washing station is based on the Burundi model. Additional facilities would be advisable in order to avoid congestion at peak intake (and hence maintain quality) and also reduce processing costs. The additional facilities required are:-

1. Ventilated storage bins. The washing station proposes to use about 200 tables whereas 100 would be adequate if ventilated bins are installed. Without ventilated bins the washing station will liable to congestion at peak processing periods during April/May/June thus affecting overall quality.
2. All timber Tables The proposed tables are the "Burundi" low cost type which are not efficient and are costly to maintain. An all timber frame table which costs about 50% more would be advisable and would save heavy expenditure on repairs later.
3. Parchment Delivery A delivery system for wet parchment (pump, piping and hoppers) is advisable so as to reduce the high use of labour.

4. Pulp separation This is quite close to the drying tables with the risk of taints. A standard "skin separation tower" far away from the drying tables would be advisable and would also reduce the risk of pollution.
5. Standard drain plugs on the outlets of the fermentation and soak tank outlets will make them water-tight when required for intermediate washing.

7.0 CONSTRAINTS IN QUALITY OF HAND-PULPED PRODUCTION

For hand-pulping, on-farm systems the processing problems responsible for the decline in quality can be grouped under three broad headings, Namely:

1. Equipment Problems
2. Process Control on Farm
3. The Single Price Buying System

7.1 EQUIPMENT PROBLEMS

- Insufficient disc pulpers in the Project Zone - only one traditional disc pulper for about 290 growers with hence long distances for farmers to carry cherry, and return load of parchment for drying.. This has been aggravated by the theft of some pulpers during the war.
- Unsuitable siting with sometimes insufficient water supply which reduces the pulping capacity.
- Poor maintenance of the traditional disc pulpers - a problem exacerbated by the transition of ownership currently under way. The essential reconditioning the discs and chops is rarely done. It is estimated that about 15% are broken down.
- Theft of pulper parts which has added to the number of non-functioning pulpers. Most of the pulpers are not enclosed or locked in any way.
- Locally made copies of drum pulpers (estimated to account for 10% of output) have proliferated in certain zones such as Cyangugu. These tend to split and spoil a proportion of the beans.
- Pulping between stones (estimated at 14% of production) produces a very high proportion of broken beans.

7.2 TRADITIONAL PULPERY PROBLEMS (CDM)

The standard single disc pulper system which accounts for about 58% of all processing has its own particular operational problems which seem to restrict its output to about 60% of the expected capacity. These are:-

Maintenance Reconditioning of the disc has been done by simply replacing with a new disc after 3-4 years but sometimes much longer. This is much more expensive than reconditioning.

Water supply Some recently installed pulpers have a shortage of water leading to dry or near dry pulping and severe wear on the discs and chops.

Density Long distance between pulpers. At the beginning and the end of the season farmers are reluctant to carry small quantities to a distant pulper and at these times they resort to other types of pulping.

Gerico Type All of this type seen in the field had sideways play on the shaft causing excessive wear on the chop knives and bulbs. The disc seems to wear out

more quickly than the standard discs.

Ownership The transition from OCIR to the producers faces the problem that many growers associations have little capacity for technical or financial management both of which are needed to operate a disc pulpery. This affects maintenance and security for the pulperies. All the pulpers seen in the field had old beans and pulp still sticking from the previous pulping; some had parts stolen; the majority of the discs were worn smooth had not been adjusted which reduces the real pulping capacity, and the quality of the finished product.

7.3 POOR PROCESS CONTROL ON FARM

- Fermenting and washing standards vary from farmer to farmer. Floaters (poor quality light coffee) are rarely separated from good heavy coffee.
- Drying is invariably on the ground on mats with the risk of taints.
- Mixed drying and under-drying are frequent.

7.4 DRYING SYSTEMS

Drying is at present done mainly by the individual farmers, who return from the CDM sites with their wet parchment coffee. The coffee is generally not fermented, though in some cases it is washed if water is available. The parchment is almost entirely sun-dried, laid out on mats, or in some cases on wire-mesh drying trays, where these are available. OCIR Café supplies these drying trays, but the demand for them is greater than the present supply. In some cases the farmers dry their parchment on the ground in front of their houses.

The competitive pressure in the market place, and the lack of premiums at present paid for parchment according to quality, has resulted in parchment frequently being sold in the local market under-dried at up to 16% or even 18% moisture. In earlier years this was not the case, and the fixing of prices for the season, with the lack of internal competition, removed any pressure from farmers to sell their coffee quickly.

OCIR Café has taken steps, together with the exporters, to address the problem of the sale of under-dried parchment, though each of the main exporters has a mechanical drying capacity at their processing plants, anticipating the receipt of wet parchment.

7.5 SINGLE PRICE BUYING SYSTEM

Differential prices linked to quality - as would be expected in a free market environment - have not evolved so far in Rwanda. Quality evaluation of parchment at time of purchase - even a basic density test - is rarely done by buyers or their agents. This encourages growers to mix lights with heavy parchment coffee. This in turn lowers quality and adds to milling and grading costs which in turn are passed back to the farmer in the form of a lower price.

8.0 CHOICES FOR QUALITY IMPROVEMENT

There are many areas in which action is needed to improve the quality and output of the majority of the coffee which is being hand-pulped, and which will continue to be processed in this manner, even if a programme of investment in private coffee washing stations is launched. These include:

8.1 HAND-PULPING SYSTEMS

Even in the event of the rapid introduction of central washing stations hand-pulping will obviously continue to play an important role in Rwanda coffee in the near future. At the centre of the quality issue is the question of small single-disc pulperies versus drum pulpers. In theory the CDM single disc hand pulpery will give a better quality of product than the small drum pulpers (Baby Bentall type), subject to water availability; maintenance; quality of pulping.

In practice the very wide dispersal of coffee holdings in the coffee zones inevitably result in pulping stations being a long way from some farmers. These farmers then resort to the old drum pulpers still in use, imitations or pestle and mortar methods. Added to this are the costs and skill for maintenance and upkeep for the disc pulpers. It seems doubtful if associations of farmers can supply the same level of technical skill as formerly supplied by OCIR. For efficient pulping disc pulpers need the back up of workshops (as in Kenya, Ethiopia and Burundi) to do the regular overhaul as well as plentiful supplies of spare parts - pulping knives, adjusting bolts. The absence of a reconditioning workshop has added to the difficulties of maintaining disc pulpers up to now.

The fact that many of the old portable drum pulpers are still in use indicates the popularity of this method among a proportion of the farmers - to the extent that they purchase locally made copies. Since the 1980's however in Rwanda the portable drum pulper has a bad reputation probably because of the tendency of farmers to use them without enough water. It should be noted in this context that 95% of all Tanzania coffee is processed through portable drum pulpers.

8.2 OWNERSHIP AND RESPONSIBILITY FOR CDM'S

The process of transferring ownership of the traditional pulperies (CDM) to the grower's associations within each commune is now under way. Office des Cafés will no longer supply field personnel, spares nor pay for the security of each traditional pulpery. Coffee extension now number only about 40 with limited transport means. The handing over arrangements include training of local technicians in each commune and supply of a tool kit for the maintenance of the traditional disc pulpers.

Meantime those associations which were visited appear to have very little capacity to do the considerable maintenance which is needed for these type of pulpers. Obviously a sustained and vigorous programme will be required to educate the farmers belonging to these associations to the fact that free pulpery maintenance services will soon be ending. Where traditional pulpers have broken down some farmers seem to have already resorted to drum pulpers, copies or basic pestle and mortar for pulping their cherry. In the event that traditional disc pulpers fall into disuse through lack of maintenance the simpler drum pulper will probably be increasingly sought

after by coffee growers.

8.3 CENTRAL WASHING STATIONS

The ability of a central washing station to produce a superior quality from the same material (fresh cherry) is well known from experience in Kenya, Ethiopia, Tanzania and Burundi. The price advantage (from the grower/producer's point of view) derives from two sources:

Out-turn efficiency
Cup quality

There are widely differing views on the amount of price differential obtainable from fully washed coffee as opposed to washed coffee. Some of the coffee exporters in Rwanda are very sceptical of real gains due to the high proportion of lights (floaters) in the parchment. Others working coffee are more optimistic as noted below:-

Differential/Price gains			
	Efficiency Gain (O/Turn)	Cup Quality Gain	Total Gain
M. Herssens (a)	6%	20%	26%
Exporter (b)	2%	4%	6%
Consultants' experience	5%	20 - 30%	25- 35%
(a)	M. Herssens; Etude de réhabilitation de la filière café au Rwanda, 1996.		
(b)	Buyer/exporter, Kigali		

Design and Equipment Central to the issue of quality differentials is the design and layout of the washing stations, the equipment used and the management standards which together determine the quality control throughout the whole processing season. Badly designed, equipped and managed washing stations produce coffee very little different from ordinary hand-pulped and washed coffee and hence with no differential price. Production of high quality fully washed mild arabica requires labour intensive labour methods (about 16 man days per ton of parchment processed) which does not present any problem in the coffee zones of Rwanda. Hence it would not seem to be appropriate for central washing stations to adopt methods used in countries where labour is scarce and expensive and where growers are content to produce large quantities of mediocre quality washed arabica. Some countries in Central America for example have expensive and scarce labour and resort to labour saving devices all of which add to costs and do not necessarily bring out the best quality. Appropriate wet-processing technology is to be found in the East African countries such as Kenya, Ethiopia and Burundi where prices for the best lots are often in excess of Central America and Colombian coffees. In the East African countries the emphasis is on natural fermentation, soaking, sun-drying and ventilated storage and the prices achieved indicate the success of the technology used.

Management Cost control and efficiency is the second major issue in central washing station operations. Appropriate use of the installations permits the following:-

- Maximising of sun-drying and hence quality and price advantages.
- Economy of labour use - hence lower costs.
- Absence of bottlenecks in processing hence maximising the throughput with economies

of scale.
- Prevention of pollution
- Effective financial control

Currently in Rwanda there is a good knowledge of standard wet-processing as practised in Burundi. However the low-cost technology of ventilated storage bins which is practised in Kenya and Tanzania is so far not well known in Rwanda. In Kenya and Tanzania the old style skin drying on separate tables has been replaced with a simple, effective system of hoppers for draining the wet parchment before going directly to the drying tables with no effect on the quality and with large economies in labour costs. The low cost drying table design which is used in Burundi has been replaced in Kenya and Tanzania by the all wood framework table with a large reduction in maintenance costs.

It would be advantageous for Rwanda fully washed production to adopt these modern designs incorporating low cost and low technology systems which promote efficiency and quality control in a central washing station. In contrast there would be no advantage for Rwanda producers to adopt highly mechanised washing stations which increase costs and do not necessarily enhance quality.

9.0 CENTRE DE DEPULPAGE MANUEL (CDM)

The CDM's described above remain the main component in the primary processing capacity, and set out here are some proposals based on an analysis of the present situation in the context of the country as it is today.

9.1 PRIVATISATION OF CDMS AND WHY IT IS NECESSARY

In the 1989 report published by OCIR Café to celebrate the 25th Anniversary of OCIR, it was noted that there were problems with the maintenance and operation of the manual pulping centres. The 1994 report 'Synthèse des Propositions de Reforme de la Filière Café' noted that there were 27 technicians and 10 vehicles utilised for the maintenance and supervision of these CDMs. Today there are 5 technicians and one or two vehicles according to availability. The present problem with the CDMs appears to be that they 'belong' to no-one. However much OCIR tries to maintain and support them, progress has been negative as there is little 'ownership', and therefore responsibility on the ground among the farmers/ users. The result is that parts are often stolen, maintenance is low, the machines are not cleaned properly, and they quickly fall into disrepair. This in turn affects the quality of the coffee, as well as the volume of throughput.

There is a need to motivate small-holders on production and quality, both in terms of growing practices as well as processing. Having relied so much on OCIR Café for help in the past, farmers need to start taking responsibility. This not only includes the CDMs, but also the provision of the extension services. This is the direction Government is seeking to take in privatisation of extension services – that the demand from small-holders be the mainspring of the provision of these services.

Working together as a group based on a CDM is a logical focus for the grouping of small

farmers. This gives the group an inherent strength and 'raison-d'être'

The CDM's need to be upgraded for the sake of improving the overall quality of production. In Guatemala, the equivalent of CDM's are widely used among small farmers, though at a slightly more sophisticated level (e.g.: plastic fermentation tanks etc.) with excellent quality results.

9.2 WHAT WOULD BE LIKELY IMPACT

The privatisation of the CDMs should have an immediate positive impact:

- farmers start to take responsibility for their machinery, therefore improved maintenance
- supply of inputs and means of funding jointly
- farmer training
- demand for extension services coming from the farmers themselves
- improved maintenance of CDM and thus of quality
- long-term sustainability, provided the training and extension components can be assured for a reasonable period - say 3 - 5 years.
- improved farm productivity, quality, and prices for coffee paid to farmers
- joint marketing by farmers

9.3 PROPOSED MODELS FOR ACHIEVING THIS PRIVATISATION

The ultimate objective over a 5 - 7 year period will be to privatise all the operational CDMs. In the first stage, however, the objective over a 1 - 2 year period will be, based on an initial trial number of 50 - 100 CDMs, to establish the optimum size of the groupings to take over the CDMs, as well as to design a suitable structure and organisational model for this purpose.

The 'Association' format is one option which may be tested for this purpose. Since the Associations at present are intended to become co-operative societies after an initial 2 or 3 year period, it would be appropriate also to test other ownership models. Alternative structures therefore need to be considered.

There is also the question, referred to in Para 3.8 above concerning the 'visibility' of the currently existing Associations down to the level of the secteur and cellule. It is anticipated that the groups to take on the ownership and management of the CDM's will in the first instance be on a much smaller scale, groups consisting of anything between 5 and 10 farmers and their families, ie those directly involved with and using the CDM. For the purpose of this report they are called 'Groupement d'Intérêt Commun' or GIC.

Different types of GIC could be tested, based on the following criteria, for example:

- Family based GIC for those related who will jointly take on the ownership and management of a CDM.
- G I C at village level, again based on joint ownership and management - and responsibility - for CDM.
- Working with Commune level associations - though this might only be appropriate for the larger units, leading eventually to an MPS or even a full CWS.

In our view the maximum per group to take on a CDM should be 10 members. Different group sizes would need to be tried in order to establish optimal size – also in relation to market and use of the machinery/equipment

Each CDM would need to be taken over by a GIC, though in some cases one GIC might, if it had the appropriate capacity, take over more than one CDM. The GIC would have a simple structure, statement of purpose and values, and the rules of the operation of a GIC would be laid down.

9.4 STRATEGY FOR PRIVATISATION OF CDM'S

To achieve the longer-term goal of privatising all the CDM's, it is anticipated to start with 100 CDMs, in order to develop standard 'models', which can then be rapidly applied to the others. The elements would include

- CDM to be cleaned up and machinery refurbished – ie new discs etc
- CDM to be equipped with fermentation/washing tanks - probably made in portable PVC material
- Machine to be enclosed so that it is lockable – ie secure and protected from theft etc.
- Group of farmers to come together to form GIC, and to appoint a porte-parole.
- Different models of ownership and structure of the GIC's to be designed and tested at this initial stage.
- Farmer on-site training to begin over period of 3 - 6 months, and to include CDM operation and coffee cultivation practices.
- Nursery development at CDM to make seedlings readily available to farmers.
- Training in finance/cash management and marketing.
- Different training methods could be tried at different locations, to see which produced the optimal results, and this system would then be adopted for the future CDM privatisation programme.
- A store to be built at each CDM, the dimensions to be determined by GIC members. GIC members to build the foundations and walls, while the roof, door, locks, etc. to be provided as part of the privatisation scheme.
- Each GIC to be launched with supply of fertilisers – 20 kgs per member or per 100 trees – and supply of pesticides, and a back-pack sprayer. All future supplies to be paid for out of funds of members of GIC.
- Consider linking 10 GIC's with one agronomist, appointed by the 10, who would receive 1/10th of his wages from each GIC, so as to be able to cover the ground and advise farmers on coffee and all other crops.... also to liaise in order to get information on inputs et al. This would also including training to help the porte-paroles with their job of organising the GIC.
- One CDM would be selected to become a model site to be used to demonstrate to other farmers so they can 'catch the vision' of what their CDM should become. Farmers to be brought to see and to identify how things should work.
- A very important factor in the establishment of the GICs will be their VISIBILITY at CDM level – eg put up a notice on the door! "This is who we are"... "this is where we belong"! Concrete steps should be taken to create identity among the farmers, and their loyalty to the GIC.
- The finance scheme for the newly privatised CDM should provide for a small amount per kg to be contributed over an initial three year period by the new owners, namely

the farmers using the CDM , to cover their purchase of the unit from OCIR Café. Ownership brings responsibility, though the full price might not be charged in cases where the farmers themselves are taking over the unit.

An NGO, ACDI/VOCA, already operating in the country, has extensive experience in other countries working with small farmer groups, also in coffee. A certain amount of funding would be sought to bring the CDM units into good condition, and to equip them to be self-supporting. Payment by the new owners to be made over a 3 year period out of their coffee, so that after repayment the initial funding could be recycled elsewhere in the industry.

In particular the programme would need to include management and technical training of the farmer groups taking over the CDMs. Also a legal structure and framework with standard operating rules and procedures would be developed in the early stages, in order to provide a model for other groups. The objective would be to take the CDMs out of OCIR Café over a reasonably short period into the private sector on a sustainable basis. Ongoing training of the new owners would also be necessary.

NB It is important to recognise that the creation of a successful GIC to own a CDM will revolve around local relationships. These relationships may not in the present circumstances be very strong, and will need to be built up. Working together on a shared economic activity can greatly assist in strengthening these.

9.5 ESTIMATED INVESTMENT AND START-UP COSTS OF A TO BE PRIVATISED CDM

An estimate has been made of the costs of bringing the CDMs up to a good standard, both in terms of the technical state of the machinery, as well as the small infrastructure investment required for each site. The investment and costs are set out in Para.18, and are estimated at FRW 1.70 million per CDM. Included in this figure are the costs of an initial supply of fertilisers and chemicals, and out of the total, it is estimated that FRW 1.25 million would be recovered from each CDM.

9.6 POTENTIAL DIFFICULTIES AND AREAS OF RISK IN THIS STRATEGY

- One of the issues which will need to be resolved is that of ownership of the land on which the CDMs are installed. This appears to vary from place to place. In order for the group of farmers to take real interest and ‘ownership’ of their CDM, it would depend on their obtaining a clear title to the property and machinery.
- The time required for farmers to become accustomed to the new approach to coffee in Rwanda. Although it has changed since 1995, there has been a period where the farmers have not felt the benefits, while at the same time finding that they no longer receive the same level of support. They are receiving better prices, but the volatility of the internal market is at times a disincentive!
- Potential of problems arising from desire for control of the GICs at Commune level. It is believed that for this strategy to work, the control of the GICs must remain as far down the line as possible.
- Unless farmers really 'own' the CDMs, both in terms of perceiving the benefit, as well as having the title documents, it is unlikely to work. Provided that real ownership can be achieved, the chances of success are much better. But it will mean having proper title documents for the CDMs, and legally identifiable and recognised statues for the

GICs.

- Problem of finding the requisite finance to permit the rehabilitation of the units before hand-over.

9.7 SUSTAINABILITY

To continue to be successful, the GICs will need a continuing training input and promotion. There is an inevitable tendency for quality standards to slip slightly unless they are kept up to the mark with good incentives and clear-sighted management. Much will depend on how OCIR Café is to be restructured, and linkages to be made between the CDMs and private sector operators. It is proposed to build in an ongoing training component for this project.

10.0 COFFEE WASHING STATIONS (CWS)/ STATIONS DE LAVAGE

There have in the past been a few CWS operated in Rwanda, but only with limited success. Details of these CWS are set out above in Paragraph 6. The reasons for their not having succeeded in the past appear to be difficulties relating to finance and management in the context of the general situation within the country. In addition, with the export marketing system up to 1994, and the taxation system in place, there was little incentive to invest in improved quality, since the benefit did not derive to the producer/processor.

The existing CWS are now in private hands, but there is some concern about their viability at the outset of this 'fully washed' industry. It is not yet clear what will be the premium which may be attained. This raises a number of issues, both about the currently existing stations and those under construction, and the potential of plans for the future construction of other stations. There is also a question concerning available finance, because long-term funds are available on a very limited scale in Kigali, and with very tight conditions. Clearly the cost of rehabilitating an existing CWS may well permit that it can be profitably managed under existing marketing conditions. However given the high cost of a new CWS - estimated at between US$ 180,000 and 200,000, with the inherent risks, as well as difficulties in raising the finance, it is far from clear whether private sector operators will be prepared to enter this field.

10.1 RISKS FOR THE NEW OPERATORS

In considering this question, it may be helpful to refer to the experience of Burundi, neighbour to the South, where a large financed project brought in the production of fully washed coffee, and with a good level of success. Rwanda's situation is entirely different, as the industry is already privatised, and it is not envisaged to have Government investing in a large washing project, even if the finance could be found. The Burundi project involved not just the capital investment, and thus the attendant risks, but also a large and prolonged input of technical assistance in training for the control and management of the pulping stations and ancillary businesses.

10.1.1 Market

Perhaps the main risk is the market. This is first the outright level of prices which, due to

world oversupply, are likely to remain under pressure for some time. There is also the risk of the differential – what premium will actually be attainable for this coffee in the early stages? Will it be possible to find small or medium roasters who will be prepared to be a reasonable premium for the finished product, rather than falling into the category of the standard qualities of Rwanda coffee? The results from Burundi, especially in the early days, were very encouraging. It is our opinion that the premium which will be achieved would probably justify the investment on a commercial basis. Intrinsically the Rwanda arabica coffee is of a quality which should justify a premium in the gourmet market, provided the quality can be produced. However much will also depend on the terms of available financing for such investments, as well as the private sector's assessment of the general investment climate. There is also the problem of the 'potato taste', which is discussed in Para.16.7 of this report.

10.1.2 Management.

It is difficult and complex to manage a CWS in a remote area, with large amounts of cash involved. Alongside this are the problems of controlling a large flow of coffee cherry. It takes careful and thorough management, and while quite feasible, it is an area of considerable risk. At present the new entrants in this field in Rwanda have no direct experience of managing pulperies in the past, though there is in one company some relevant experience from Burundi.

10.1.3 Farmer response and supply of raw material

The new pulperies will only work provided the farmers are willing to co-operate and sell their cherry. It is expected that farmers will welcome the CWS, bringing as it does the market to their doorstep, but the acceptance of a much lower price per kilo for cherry` coffee as opposed to parchment (the ratio locally is estimated at 5:1) may be a problem. Farmers generally do not place a monetary value on their labour, and it may remain more attractive to them to continue to sell higher priced parchment coffee, rather than the cherry, despite all the additional work involved.

Provided the CWS have access to sufficient crop finance to ensure that they can make immediate and regular payments for cherry deliveries, the farmers are likely to accept fairly quickly the sale of fresh cherry rather than parchment. In each location where a CWS is installed, the owner/operator should work in close collaboration with the extension services. This will provide information to farmers, not only on agricultural practices, inputs supply and harvesting, but also on the market and benefits of selling fresh cherry. At the same time, OCIR Café could publish each week not only the indicative price for parchment coffee, but also the indicative price for fresh cherry.

(Initial indications from Nkora in April 2000 were encouraging. The cherry price gave farmers a significant premium to the equivalent level at which he would sell had he made parchment coffee. It remained to be seen if the coffee would command a sufficient premium to justify the cherry premium as well as amortise the investment.)

10.2 INVESTMENT AND START-UP COSTS

The investment requirement is relatively high, added to which must be the cost of starting production, with promotion work needing to be done with farmers etc. In addition, there is

the large cash-flow financing need to cover the purchase of cherry through till first delivery and payment (which may anyway take longer as time and effort is required to locate the best potential market for the improved quality). This was true of the Co-operative at Nkora, which had inadequate access to crop finance, and therefore missed three vital weeks of production at the beginning of the 2000 season. The investment and start up costs are shown in Appendix II.

10.3 INCENTIVES FOR PRIVATE INVESTMENT INTO STATIONS DE LAVAGE

In other countries with extensive pulping capacity built up in recent years, especially where related to small-holder farmers, this has been developed with considerable amounts of assisted funding – either World Bank projects or other schemes to provide the necessary finance and training to assure the success of the project. This was the case in both Burundi and Ethiopia. In the latter the private sector has in recent years started making its own investments, as it could be seen to work and be profitable. But a training programme has taken place over many years in Ethiopia which has been a very important component.

Can private sector investors be expected to the all the risk? It seems doubtful that they will have the resource capacity to be able to carry it through, unless the premiums achieved in the market are very significant, and the coffee is quickly established in the gourmet sector. This is already been felt in the existing projects, where it seems the development is a little delayed, in part due to cash-flow constraints. Once approaching the start of production, there will be the need for training of staff, as well as working with farmers on the new methods of selling their coffee (in cherry not parchment) and explaining to them the advantages and cost benefits.

In view of absence of export taxes, it is difficult to see how to give fiscal advantages, though something could be achieved through the availability of financing. If finance were made available at modest rates (say 6 – 8% per annum) on Rwanda Franc borrowings over 5 years, with one year grace period, and with security required to be the coffee washing station alone, there is a good chance that a number of these stations would begin to appear. The bank or finance institution through which the loans were made would need to ensure that in the event of the failure of the borrower to repay, they gained title to the washing station. In that event they would need to find others to manage and run the plant so as to ensure the continuity of the business, with a view to recovering the investment.

Therefore specific areas to be covered:

- finance – Rwanda Franc funds available over a 5 – 6 year term at favourable interest rates and secured on the factories themselves.
- training grants for CWS management staff
- marketing assistance – most CWS are linked to exporters. Some assistance may be appropriate in financing the cost of overseas representation at key Trade Fairs etc. in the early stages.
- technical assistance on quality – training of liquorers and quality control staff
- extension support and local promotion among small-holders

10.4 CRITICAL FACTORS FOR THE SUCCESS OF THE PRIVATELY OWNED CWS

In discussions with the private sector operators of the existing CWS or those under

construction, as well as other participants in the industry, there were three approaches being taken:

a. At Nkora the co-operative which had taken over the old CWS and rehabilitated it was confident that it would be possible to operate at relatively low cost, and to produce coffee which would command a significant premium. They did not, at the time of meeting, have a clear marketing strategy, but they had been very encouraged by farmer response to the project, the good deliveries of cherry which they were receiving, and the resulting quality.

b. The private sector operators building new pulping stations were moving ahead on the basis that the first two stations would enable them to determine the premiums which they might reasonably hope to achieve from the fully washed coffee, and to establish the viability of continuing to build further CWS. Without having any fully washed coffee to offer at that time, the premium was still only an estimate in the order of 20 cents/lb compared to the 'Rwanda Ordinary' quality produced from the parchment coffee.

c. Other private sector operators (usiniers/exporters) were aware of the need to take action to improve quality. However they preferred to wait to see the results of other CWS projects, and the premium achieved for the coffee. The competitive pressure in the market has been narrowing margins for the normal business, (purchase of parchment, cleaning and export), and this may encourage the exporters to pursue the avenue of investment in improved quality.

The main risks for the private investor are set out in section XX above, including market risk, management, and farmer acceptance. In addition there are other important factors:

10.4.1 Cost of entry and achieving 'critical mass'

The cost of entry into the production of fully washed coffee is relatively high, and any investor must have sufficient means and be prepared to take this initial risk. For the country, one of the main factors will be that of 'critical mass'. In the past production has been limited to two or three CWS. It is not clear exactly why these have not grown and been maintained, but it is likely to have been a combination of factors, namely:

- insufficient premium compared to the normal qualities
- management difficulties
- finance difficulties
- constraints from a 'controlled' market

10.4.2 Overall supply/demand situation of coffee market

Given the global oversupply of coffee and the liberalised internal market within Rwanda, there would seem to be every prospect that investment in fully washed coffee should be profitable. It is as the production attains a volume where fully washed Rwanda coffee achieves recognition in world markets that there will be a better chance of its sustainability. The demand for the coffee will grow as the supply is available.

10.4.3 Creating an appropriate marketing platform

The sale of fully washed coffee requires a different approach to the market than that of normal standard or ordinary Rwanda coffee. This is due to the different type of roasters buying the finer qualities. The marketing is discussed in Para.14 of this report.

10.4.4 Maintaining and improving quality of fully washed coffee

It is one thing to establish a CWS. Equally challenging is the running of that CWS over a period of years, and maintaining and improving the quality of the finished product. This can only be achieved with constant attention to the detail of quality control, as well as innovations and improvements in processing techniques. An important role of OCIR Café in the future would be in the ongoing training of technical staff at all levels of the industry, but particularly for the CWS units. In this connection the rehabilitation of the CWS at the ISAR Research Station would be important, providing a training base at which to give courses, and carry out trials for different processing procedures under specific conditions.

There is also the need to assist farmers delivering cherry to the CWS to improve their agricultural practice to improve the quality of cherry deliveries. The CWS management would need to co-operate with local extension workers to develop the appropriate means for providing this help to farmers. It is of concern to note in some neighbouring countries the tendency for quality to slip over a period of time.

10.4.5 Water supply and environmental issues

The production of fully washed coffee requires an abundant supply of reasonably clean water. With the increasing population, the demands on available water are growing constantly, and there may in some areas be competition for available supplies.

Of equal importance is the establishment and maintenance of high standards in controlling effluent from CWS. Unless this is properly treated, it can cause serious pollution to local water supplies, and standards in this area will need to be developed as the fully washed industry moves ahead. Up to now, little regard has been given to this question, as with the small number of pulperies, it has not become an issue. If the fully washed industry is to develop rapidly in Rwanda, attention needs to be given to this from the outset. In a normal washing station, it is estimated in Kenya that as much as 90,000 litres of water are used to produce 1,000kgs of clean coffee. If partial recirculation is used, this can be reduced by 50%, and if full recirculation is used, the quantity drops to about 24,000 litres.

Much useful work has been done on this in Kenya, Colombia and Costa Rica, and it is recommended that information be obtained from these sources in order to lay a clear foundation in this area.

11.0 UPGRADE OF CDM TO MINI-PULPING STATIONS (MPS)

There are at present three 'models' for the production of parchment coffee:

a. the CWS - full-scale Coffee Washing Station
b. the CDM - Centre de Depulpage Manuel
c. the informal sector with small drum pulpers

In recent years new technology has been developed in Latin America which permits the handling of smaller quantities of cherry coffee for the production of fully washed coffee. There is machinery available in both Brazil and Colombia which has been developed to suit their local conditions, and much could be gained from testing this machinery in Rwanda, with a view to establishing both suitability and viability in local conditions. Not only have the

capacities of the machines been adjusted to lower throughput, but the utilisation of water has been drastically reduced. In a normal CWS as much as 90,000 litres of water are needed per 1000 kgs of parchment coffee output. In the new mini-pulping units, it is estimated that as little as 1500-2000 litres are needed per 1000 kgs parchment. Information on such units is set out in Appendix II.

11.1 MINI-PULPING UNITS (MPS)

This new machinery is available for smaller scale operation than that of the CWS, though of a larger scale than the existing CDM units. It uses some new techniques for reducing fermentation time and requirements. There is also new drying equipment, which can be a critical issue during the period of harvesting and processing which occurs during the rainy season.

The key advantages of this new system are:

- production of fully washed coffee
- minimal use of water resources
- ease of management
- simple technology
- pollution control
- modest investment therefore easier to diversify ownership

11.2 INVESTMENT AND START-UP COSTS

The machinery costs and estimates of working capital requirements are set out in Appendix III to this report. The finance required is very modest, and is suitable in particular for places where production is relatively scattered, so as to avoid transport costs of cherry to the production unit.

The capacity of these mini-units varies according to the requirements of each situation, but runs from about 1500 kgs of cherry per hour up to 4500 kgs per hour.

11.3 OWNERSHIP

As is anticipated with the privatisation of the CDMs, it is expected that these MPS will be owned by GICs or local groups. Different patterns of ownership would need to be tested in the early stages, including local GIC's, Associations, a mixed group of local farmers together with an exporter or usinier, or simply local business-men interested in providing a service to their local community, which should produce a reasonable return.

It is to be noted that rural investment does not lend itself either to the structure of the limited liability company, or to co-operatives. In the case of the limited liability company, there is a tendency to have the involvement of 'shareholders' who have nothing directly to do with the business and its activity. If these MPSs are to work, those owning them must have a keen personal interest in their success. Equally with co-operatives, experience in other countries has shown that difficulties in establishing and maintaining accountability, and in the balance of power between the management and members generally leads into problems. There seem to be few cases where co-operatives have been successful on a sustainable basis.

Consideration therefore needs to be given to the legal framework for ownership.

11.4 RISKS AND POTENTIAL FOR SUCCESS

The establishment of MPS involves certain risks, but it is believed that they should succeed, and provide a useful alternative model for improving coffee quality, rather than the full investment in a CWS.

The risks include

- whether the new technology will be easily adapted to local conditions in Rwanda, and be found to give the same results
- the investment climate in the country
- acceptance by farmers, and finding groups willing to invest in such development.
- finding others who may be willing to co-invest with farmers in a particular MPS

The benefits include

- improvement in quality, and thus market value of finished product.
- reduced transport of cherry by virtue of a larger number of small units, easing access by farmers directly.
- bringing improved technology closer to the farmers, and using the MPS as centres for distribution of inputs, as well as extension advice, thereby motivating farmers to improve productivity and quality.

11.5 STRATEGY FOR IMPLEMENTATION

If the MPS model can be shown to work, then it is likely to become popular within the country over a relatively short space of time. In Para.XX of this report is set out a proposal for the testing of some of the proposals in this report, and this includes the establishment of 5 MPS units in different parts of the country. The objectives would be to test the technology in local conditions, as well as provide demonstration units to enable local farmers and entrepreneurs to see the units in operation, and to understand their full potential.

It is proposed therefore, in the project outline, to include the financing of 5 units, which should within their first season be entirely self-supporting. If these three units prove successful, then the objective would be to develop a further 50 - 80 units over the coming 5 - 7 years, so as to enhance the value and productivity of the coffee in the areas where such an investment would be justified by the available supply of coffee.

12.0 INFORMAL SECTOR PULPERIES

According to recent estimates, about 41% of the entire crop is still processed using small drum pulpers, home-made machines and mortar and pestle. It is evident, looking at the quality of an unsorted sample of milled coffee in Kigali, that a considerable percentage of the beans are damaged at the pulping stage, and it is likely that much of this damage is being done in this 41% of the market.

It is therefore of primary importance that this sector be addressed, and solutions found to improving the equipment and practice of these operations.

12.1 REASONS FOR EXISTENCE OF THIS SECTOR

The main reasons for the fact that over 40% of the coffee is handled in this way appear to be:

- distance of farmers from CDMs, resulting in long journeys on foot to pulping centres with cherry, and then returning with wet parchment coffee
- waiting times at the CDMs when the coffee is in season. According to estimates, there is on average across the country one CDM per 290 farmers. Since most coffee in one particular area will ripen at about the same time, this clearly makes for congestion at the CDMs, and may result in the processing of old cherry.
- the state of the CDMs, and the low output. Compared to the output of 400 kgs of hour from a single disc pulper, it is estimated that most are operating at about half that capacity, due to the poor condition of the discs and the machinery.
- lack of water at some CDMs

Instead of taking their coffee to a CDM, many farmers therefore handle the pulping of their coffee as best they can. In many areas, individuals with small drum pulpers provide a service, payable with a small quantity of coffee, of pulping the coffee. In many cases these small drum pulpers are home made, with low output, and often damaging the beans.

12.2 STRATEGY FOR HANDLING THE PROBLEM

The overall strategy for bringing this 'informal sector' into the main lines of production will be:

- the gradual rehabilitation of the CDMs, improving capacity and productivity, so as to attract more coffee into these
- the establishment of the CWS in certain areas, which should draw cherry away from the informal pulpers
- the establishment of MPS with the same effect
- replacing existing home-made equipment with improved hand machines, which will enhance quality and outturns. (see below.)

12.3 IMPORTATION OF DRUM HAND-PULPERS

There is a latent demand for small drum pulpers ('Baby Bentalls' as they are called) in the country. This particular marque is known among the local processors, having been imported in earlier years, and proved to be a reliable machine. In the initial stages, it is proposed to import 100 of these units, and sell them in one or two specific areas which are identified as having large numbers of informal sector pulpers in operation.

The quality of coffee from these areas will be monitored in order to establish whether there is any quality improvement achieved by this means. Since this is entirely in the hands of the private sector, this fits well within the Government's policy guide-lines. The small units are owned by small entrepreneurs, and the new units to be imported would be sold to them, possibly giving credit if this is deemed to be necessary to have the machines distributed quickly.

Provided the test batch of 100 pulpers is successfully placed in the market, further quantities would be imported over a 5 year period, with a view to improving the bulk of this equipment. At the same time a workshop in Kigali would need to be equipped in order to handle the servicing and maintenance needs of these machines, as well as the CDM units

A description of the machine and price quotation is in Appendix IV.

13.0 COFFEE MARKET STRUCTURE

The marketing of the crop, up to 1994, was almost entirely in the hands of one company, M/S Rwandex, which was majority government-owned. This had been the case over a prolonged period, and in general the period had seen a good increase in production, and the coffee well accepted in international markets.

Since 1995 the government's policy has moved towards liberalisation in all sectors of the industry, and there are now at least 3 other private firms involved in coffee purchase, process and export marketing, apart from Rwandex, who continue to handle a large percentage of the crop.

In considering the changes in the primary processing, with the production of fully washed coffee, it is appropriate to review the marketing arrangements and examine the options.

13.1 INTERNAL MARKET

The coffee is purchased in parchment form from small-holders by local merchants or agents working on behalf of exporters at village level. These buyers then may deliver to merchants who group into lots by the truck load – 10 – 20 tonnes – for delivery to usiniers/exporters. OCIR Café sets the moving price scale (‘échelle mobile’) at the beginning of the season, and the weekly minimum indicative parchment price, this latter being agreed with exporters, producers and associations at a weekly meeting during the season. OCIR Café does not enter into the marketing chain at any point, exercising a control of the quality before export, and monitoring quality and price movements in the field. (See Appendix XIV for an example of the ‘echelle mobile’.)

13.2 EXPORT PROCESSING AND MARKETING

The usiniers/exporters receive the parchment coffee, and mill the coffee, then sort and hand-pick before presenting the lots for export. Each lot is at present moved to the OCIR Café export warehouse, where the sampling is done for the issue of the quality certificate, which combines with the export licence for the lot. Lots are usually made up of 300 bags, being the quantity normally stuffed into a 20 foot container.

Each of the exporters has a processing facility in Kigali for the treatment of parchment coffee, and production of export qualities. Rwandex, long established in the business, has other processing facilities in other locations. It is estimated that the capacity of the already existing export processing facilities of the 4 major exporters is probably around 48,000 tonnes assuming

a 6 month operating season, operating 72 hours a week.

13.3 ROLE OF OCIR CAFÉ

The present role of OCIR Café is in the certification of export quality of the coffee, the determination of the weekly indicative prices for parchment, extension services and technical support for the CDMs, which they own, liaison with the research establishments, nurseries and improvement of plant stock, and general supervision and monitoring of the industry. In addition OCIR Café deals with membership of international organisations (eg ICO, IACO).

At present, all export coffee is first delivered to and stored at OCIR Café's warehouse, where it is loaded for despatch to the coast. OCIR Café also handles the distribution of some farm inputs, fertilisers and chemicals, though this is gradually moving towards the private sector.

14.0 EXPORT MARKETING SYSTEMS

In the light of the GOR's liberalisation of the industry, there are different export marketing systems which might be adopted. These are examined below.

14.1 FREE MARKETING - EXISTING SYSTEM

At present each exporter may sell his coffee to the buyers of his choice and at whatever price he decides. This is done on an individual basis, and each company works out its own policy. Export taxes have been removed, and the market is fully competitive.

This system seems to be working well. It appears that each of the main exporters has developed, or is developing, close ties with one or more European importing companies. This is not only due to the interests of those importers having invested in the exporting companies in Rwanda, but also meets the needs of the exporters. With the present structure and patterns in the market, it is often necessary for the exporter to be able to sell on price-fixing contracts at times with buyer's option to fix. At other times he may need to move his coffee, even if there is no immediate outlet with the roasting industry. The importer in Europe provides not only market intelligence and information to the exporter, but also can bridge the gap between the supply and timing of the demand from industry. A list of the major exporters is shown in Appendix XIII. The disadvantage of this kind of relationship may be that the exporter is not as free to offer his coffee as widely as otherwise he might. His exposure to the broader market may therefore be limited.

14.2 AUCTIONS IN KIGALI

In the report of June 1994, 'Synthèse des Propositions de Reforme de la Filière Café', it was recommended that a system of auctions be put in place in Rwanda for the marketing of the crop. This proposal was not implemented, as it did not meet with a positive response from the usiniers/exporters, who own the coffee, and prefer to do their own marketing direct. The 1994 report went into some details regarding the organisation and management of an auction system. The proposals could be adapted to the present environment, but since the liberalisation of export marketing, at least at the time of writing the present report, there was

little interest in a centralised auction system from the exporters.

There are divergent views on the efficiency of auctions in marketing a coffee crop. There has been some criticism of auctions in neighbouring countries, due to what is perceived to be the failure of the auction system to deliver good results for the benefit of the farmers. However it can be argued that the auction in and of itself in each of the cases has been an efficient method to market the crop. The problems which have arisen have been more to do with the structure of the internal marketing systems within the country before the coffee reaches the auction.

Provided auctions are properly established and managed, and attract a sufficient body of buyers, auctions can be a very good way of marketing, in particular arabica coffee. The individual lots are judged, each on their own merits, and competition in bidding in the auction assures that each lot is paid for at its full potential according to quality. Auctions have for many years been run in Kenya, Tanzania and more recently Burundi. The results of the auctions themselves have been generally very good, adapting over the years to many different and at times difficult marketing environments (for example non-member auctions in Kenya). However the good results of the auctions have not always flowed back to the farmers due to problems with internal market structures.

The auctions also have the advantages of transparency (it is possible to keep track of the prices and market values), rapid payment to producers, since coffee has to be paid within 7 days of purchase, and the benefits of wider competition for the coffee than may be achieved by an individual seller working in the market.

Auctions do have certain disadvantages, notably the problem of the owner of coffee who may wish to sell his production forward. These problems can be overcome, but to do so would depend entirely on whether the owners of the coffee, namely the usiniers/exporters, were sufficiently convinced of the benefits to be derived from an auction to have them put their coffee through.

There may be either a mandatory auction, requiring that all coffee goes through the auction system, or it may be optional, according to the coffee owner's wishes. It is much more difficult to make it work for part of the crop rather than all the coffee. Buyers who have the cost of establishing and maintaining a presence to participate in auctions will probably not be willing to do so unless there are regular offers of reasonable volumes to make it worthwhile.

If an auction were to be established in Kigali, this could be arranged and managed by OCIR Café. However, given the relatively limited volume of coffee (less than 20,000 tonnes per year at present), and the short season, it is doubtful whether it would be possible to attract to an auction in Kigali a sufficiently large number of buyers to give an auction adequate liquidity. Without enough competition, the auction would be at risk of establishing price levels which were below international markets. In addition, given the liberalisation of the industry, the exporters would need to be in agreement to market their coffee in this way. Given the already established marketing channel, it is doubtful that they would be willing to put all their coffee into an auction in Kigali. It is not therefore considered that a Kigali auction is, for the time being at least, a viable option for the marketing of the crop.

14.3 ALTERNATIVE AUCTIONS STRATEGIES

Rather than the risk and cost of establishing an auction in Kigali, another possible approach might be to 'attach' a certain quantity of coffee from Rwanda to one of the other auctions in the Region. There are regular coffee auctions during most of the year in Kenya, Tanzania and Burundi. In all three cases, the auctions are conducted in U S Dollars, and payment by buyers is made in dollars.

If a producer wished to market his coffee through this system, it should be possible to make the necessary arrangements for the coffee to be sold this way. The legislation is already in place in Kenya for this to be done through the auctions in Nairobi. Indeed, Rwandan Tea is sometimes sold through the Mombasa Tea Auctions. It would be necessary to visit all three of the existing auctions, to see which has the best representation of international buyers, where the bidding is strongest and most competitive, and how the logistics could be managed.

Given the nature of the fully washed coffee, the auction in Kenya might be an appropriate place if this solution were favoured, since the buyers of fine Kenyas are likely to be the same as those for the finer quality Rwanda coffees. In addition, there are at present more buyers regularly bidding in the Nairobi auctions compared to those in Tanzania and Burundi.

14.4 TENDER SYSTEM

At the time of the liberalisation in Uganda in the early 1990's, the Co-operatives ran a successful tender system over a two year period as the means of marketing their coffee. About 20 international buyers were approached, and agreed to participate in the tenders. Initially the bidding for each tender was very active, and the response very good, though after a period of several months, the buyers had declined to about half the original number. Prices achieved were excellent, the system was transparent, and satisfied all the requirements of the participating co-operatives in the marketing of their crops. The system was discontinued after a period of about four years, as the quantities of coffee available through the Co-operatives declined, due to the intense competitive pressure from private sector operators in the liberalised internal market.

14.5 INTERNET MARKETING

There is also the possibility of developing a market network using the internet. It would be possible to develop a Website, and ultimately to use this as a platform for offering the coffee into the market, either in an electronic 'auction' or else using the site to identify interest for the coffee, to be followed up by conventional means (phone, fax, e-mail).

While the Internet can overcome some of the communication issues, it can also raise others. It can attract interest from buyers without the knowledge and expertise of the commodity, buyers who are looking for very small quantities (for example 5 bags for their neighbourhood roasting business), and others without the financial means to be able to participate. All these elements would need to be considered and screened.

The coffee market is moving cautiously in the direction of the use of the internet, both among

growers and exporters, as well as roasters and importers. However, the critical factor in any market transaction, given the nature of the commodity and the market, is the confidence which exists between buyer and seller. This can only be achieved by each party knowing the other, and developing the relationship which permits the handling of the transactions. Internet or traditional marketing systems will alike depend on this. As production of fully washed Rwanda coffee increases, so the Internet avenue is likely to open up further, with new opportunities.

15.0 CLASSIFICATION OF COFFEE

The classification of coffee will depend increasingly on the application of standards by private sector operators at every level in the coffee market. One of the roles of OCIR Café will be to establish, in agreement with the private sector, quality standards for all types of coffee. This should assist in the raising of quality from small-holder producers, as well as maintaining standards for the intermediaries in the marketing chain.

15.1 CHERRY

There is at present no classification system for cherry. For the most part farmers handle the pulping and processing of their own cherry, and they have no facilities for separating different qualities. With the rehabilitation of the coffee washing stations, it will become necessary to establish a system for the classification of cherry, based on the colour (ripeness), and density. This is a simple volumetric test, where a 20 litre container should weigh 12 – 14 kgs. Poor quality cherry may weigh 8 – 10 kgs for the same volume, which gives immediately the indication as to its real quality and hence value.

15.2 PARCHMENT

Competitive pressure in the internal market is at present resulting in most exporters accepting to purchase all parchment coffee which is offered to them. The result is that the farmer producing poor quality is not penalised, while the farmer taking care of his coffee is not rewarded.

In the early part of the 2000 season, some of the exporters raised the issue of other exporters and their agents accepting to buy coffee which was under-dried, resulting in a general decline in the quality in the market.

The existence of a joint marketing committee with OCIR Café and the exporters, meeting as it does every Saturday morning to discuss pricing and other current industry issues, has proved a very positive step. It provides a forum into which these matters can be brought, and there is a measure of industry self-discipline which is beginning to be applied, thanks to these meetings.

As with cherry, a relatively simple volumetric test can be applied to parchment, based on the weight of a 20 litre measure. In addition to this, the general appearance of the parchment gives another clear guide as to its quality (colour, number of cherries and broken pieces). In addition to this, the moisture content of the parchment can be easily tested to ensure norms are being met.

15.3 GREEN COFFEE

In this case, the quality standards are laid down by OCIR Café, and a copy of the Quality Certificate is in Appendix VI. OCIR Café classifies each lot according to the quality of green coffee, roasted beans, and cup quality. There are:

Supérieur	85% above Screen 15,	< 36 defects
Standard		< 58 defects
Ordinary		> 58 defects

Unclassified qualities include brisures and triage.

As noted elsewhere in this report, most of the whole bean coffee being exported is classified in the 'Ordinary' category. This reflects in part a decline in the crop husbandry practices of the small-holders, and in part the demands of the international market. Exporters could in many cases produce 'Standard' quality, by sorting and hand-picking the coffee before export. They do not do so for the simple reason that the international market pays an insufficient premium for the extra costs and loss in weight involved. The premium for Standard compared to Ordinary may be between 1.5 – 2.0%, whilst the additional costs and loss in weight may be between 4 and 6 percent.

16.0 OTHER FACTORS RELATED TO QUALITY AND PRODUCTIVITY

There are several other areas which have a direct bearing on the productivity and quality of coffee, and to which attention needs to be given. In most cases these are long-term issues, which need to moved in a positive direction, including the involvement of private sector participation in appropriate ways.

16.1 SUPPORT FOR R & D SIDE OF THE INDUSTRY

The capacity of the research establishment was greatly affected by the events of 1994, and at present within ISAR there are only very few researchers working on coffee. Even among these, there is little long-term experience specifically related to coffee.

Given the heavy cost of disease on yields in Rwanda, and the difficulties of chemical treatment, there is little option but to work as rapidly as possible towards improved disease-resistant varieties. Various aspects of this are discussed in Section 2, Para.12 of this report.

In order to move forward the research effort, as well as provide some immediate impetus for the improvement in the available stock of replanting material, it is proposed that:

- a plant breeding consultant with East African arabica experience be found to come and spend initially a period of 3 months training Rwandan staff at ISAR. Thereafter the same person (if possible) to make a quarterly visit of 2 – 3 weeks over a 2 year period, to follow up the programme and provide training and direction to the plant-breeding and research programme.
- The CWS at ISAR (Research Station) be rehabilitated, and used as a test pulping

station, as well as a training location for those need to have staff trained in CWS management and quality control.

- In order that the research side of the industry be aligned with the needs of the international market as well as the local industry, a joint committee be established to include the leaders of the research sector, producers, exporters and OCIR Café representatives. This committee to liase with the Ministry of Agriculture on national research priorities for coffee, with the coffee research institutions, and private sector operators.

16.2 EXTENSION SERVICES

The World Bank is in course of preparing a project directed at assisting and improving extension services and other aspects of agricultural development. It is understood that this project will include an element for assistance to the coffee producers. There needs to be close liaison with OCIR and Ministry of Agriculture on this - but much will depend on the institutional framework and goals established. The objective is to provide extension services on a demand-driven basis. For coffee, this will mean creating the frame-work at grass-roots level which will drive that demand.

At present, OCIR Café has about 40 extension staff, most of whom are working in the field. This means that there is about one 'agronome' for every two Communes in which coffee is being encouraged. Compared to the network of 'agronomes' and 'moniteurs agricoles' of earlier years, this is a much reduced number. They are nearly all equipped now with motor cycles to facilitate movement round their work areas.

It is recommended that this group of coffee specialists should be given further training, both in coffee growing and post-harvest handling, as well as in other crops, to give them a greater range of skills to serve their farmers. In the re-organisation of OCIR Café, the future role and function of the extension services are being reviewed and considered. One possibility is the separation of this part, with a view to its becoming self-financing over a period of several years.

Such a scheme would involve creating a separate organisation for purposes of training and motivating the extension service staff o OCIR Café. This new organisation could be created as a transitional arrangement between OCIR Café having these extension staff, and their becoming fully 'privatised' or independent. Under such an scheme, there would, over a 3 – 5 year period, be the move from subsidy of salaries and operating costs to the point where these could be covered by margins from sales of farm inputs, supplies and implements. There are different possible means of achieving this end Each extension agent might operate as a micro-business/sales person, with support, training and assistance from a central organisation. After the transition period, the organisation could become fully commercial.

It is considered to be of vital importance that the inputs be handled on a strictly commercial basis. In order that the private sector be encouraged to provide these inputs without the constraints of 'unfair' competition from subsidised inputs from other sources, it must be seen that this is being done commercially.

16.3 NEW PLANTING MATERIAL, IMPROVED VARIETIES, NURSERIES

As is pointed out in Paragraph 4 of this report, the survey of existing facilities established the number of nurseries at present in production, and the expected output of seedlings that will be available to farmers. Additional work remains to be done on the varieties to be planted, since disease resistance, and mostly from leaf-rust, is a key for the future viability of small-holder coffee in Rwanda. There is also the issue of the age of the tree-stock, 20 – 25% of which is over 30 years old. *(National Coffee Census 1999)*

Up to now, the most favourable reports seem to be coming back from plantings of Ruiru 11, a hybrid developed in Kenya, and which has good resistance to both leaf-rust and CBD, thereby reducing the costs of chemical inputs for the crop. Given that crop-losses from leaf-rust in Rwanda are estimated to be as high as 30%, the issue of plant selection for supply of new material to small-holders is of critical importance.

Chemical control of leaf-rust requires at least 6 or 7 sprays per annum of copper, a task which is impracticable with the large number of very small coffee holdings. If one or two of these are missed, or the rains are heavier than expected, much of the benefit can be lost. The best form of defence is the plant itself.

It is recommended, therefore, that steps be taken without delay to obtain additional Ruiru 11 breeding stock, so as to be able to multiply the availability of this type as quickly as possible. As mentioned in Para.4, some CBD has been found in the ISAR plt of Ruiru 11 trees, thought to be due to the fact that these were planted from seed, rather than cuttings. Steps would need to be taken to acquire a stable supply of suitable planting stock.

At present, seedlings are sold to farmers at F.Rw.5.00 each (about US$ 0.015), and even at this price there seems to be little enthusiasm among small-holders to buy the plants. In the past, they have received seedlings free of charge. It is understood that in one area in 1999, there was a 'stand-off' between farmers and OCIR Café, since farmers refused to pay for seedlings. Since these cannot be kept in nurseries beyond a certain stage, OCIR Café was finally obliged to give away the seedlings to farmers.

If improved planting material is to be made available, and there is to be a move towards a privatisation in this area, either farmers are going to have be accept paying much more for their seedlings, or some means of subsidy will have to be found.

The present price of clonal seedlings in Uganda is around Ushs 300.00 (US$ 0.20) each, whilst in Tanzania farmers are currently paying TShs 50.00 (US$ 0.0625) for their seedlings, a price which is about one third of the estimated cost of production. There is a need for an information campaign amongst the farmers, to explain to them the benefits from improved varieties, and to encourage them to modernise their agricultural practice. This also is related to the very small size of the average holdings, and leads on to the following recommendation.

16.4 CONSOLIDATION OF SMALL-HOLDINGS

According to the 1999 National Coffee Census, the average small-holding of coffee is 152 trees. In a world where there is increasing concentration at all levels in society, and especially in terms of economic activity, it is desirable, in terms of productivity, to try to find means of consolidating coffee holdings into larger units. This would permit better crop husbandry, with spraying for disease and pest control, and lead to higher yields and incomes.

A scheme along these lines has been implemented at Gikongoro among farmers growing potatoes. The results of that scheme, implemented by World Vision, Rwanda, have been extremely positive, with a sharp increase in productivity and farmer incomes. While coffee, taking 3 – 4 years to come into full production, poses some more complex problems, nevertheless the principles remain the same. Alternative crops would have to be grown on land 'liberated' from coffee so as to be able to provide for households while the new stands of coffee were coming into production. With the current low market prices, it is an idea moment to envisage such a scheme, since the revenue loss would be much lower.

Such a plan would need to be based on the willingness of farmers to work together, at a limited and very local level, with a view to assisting one another, a practice which is common in Rwanda.

It is proposed to work at Cell level, to bring together the farmers in one or two specific areas. Over a period of 3 years, they would be assisted to consolidate their coffee into one large holding, cultivated and managed by the farmers together. In so doing, the old bushes would be uprooted, and the replanting done in one area of land, divided into blocks, according to the size of the original holdings. The new disease-resistant varieties would be used, and the chemicals and fertilisers would be supplied, if necessary on credit, to ensure good yields and quality.

It is of the utmost importance that this be done only in cases where farmers are willing to work in this way. Unless it is supported from the grass-roots, such a scheme could not work. It pre-supposes an input in information and training for the farmers, to be able to demonstrate the benefits to be gained, and also to warn of difficulties which might arise.

16.5 WOMEN IN COFFEE PRODUCTION

According to the 1999 National Coffee Census of the Coffee Industry, 24% of all coffee growers in Rwanda today are women. In some areas the figure is as high as 30%. It is proposed that in two areas, to be identified, a project be developed with a view to assisting the women who own and manage their coffee farms. This would be with a view to identifying specific areas in which the women need assistance, in order better to be able to assist them in the future in other areas.

It is recommended, therefore, that in two specific areas, to be identified, that groups be formed, composed of women only. The purpose would be to provide them with assistance in their management and crop husbandry, as well as post-harvest handling and processing. The objective would be to establish how, in other areas, the best results might be achieved for helping these households across the country.

16.6 EROSION AND COFFEE

One of the issues at present being widely discussed in Rwanda is that of the control of erosion, and possible methods for this. Coffee, with its long tap root, is well suited for this, combining a useful retention of soil, while at the same time producing a cash-crop for the farmer. It is to be noted that some of the newer varieties have an adventitious root system, which is probably less suited for this purpose. Evidence from Cyangugu indicates that coffee

has been used to good effect to reduce erosion. The Sous-Prefet has advised farmers to plant coffee, especially on the very steep slopes, and then to use mulching, as the best means of using the land productively and reducing erosion.

While coffee has a long tap-root, it needs to be established, before proceeding too far with such a proposal, that the coffee root system will indeed benefit an anti-erosion terracing eco-system, or whether the rooting system of the coffee will actually detract from the productivity of other crops being cultivated on the terraces.

It is therefore recommended that a test be done, in controlled conditions in a specific area, to:

- identify the questions which need to be answered concerning coffee and erosion control
- establish the answers to these questions, and the costs and benefits of using coffee for this purpose.

16.7 POTATO TASTE (GOUT DE PATATE)

The 'potato taste', in French 'gout de patate' in German 'erbsig', is a cupping fault in coffee primarily found in the Great Lakes Region of Central Africa. This is of critical importance in determining the value of an arabica coffee. It is estimated that this defect results in a reduction of up to 10% in the value of the entire arabica crop from Rwanda on the world market.

At present, even with the best processing, to produce a top quality 'fully washed' coffee, the final product would almost always be sold at a discount to equivalent coffees from other countries, due to the risk of potato taste.

Much work has been done on this question, notably a study conducted by M/S Bouyjou, Fourny and Perreaux on the Potato Taste in Burundi Arabica Coffee, and reported at the 15th Assembly of ASIC in Montpellier in 1993.

In considering the question of investment in fully washed coffee from Rwanda, it is of importance that the findings of that study be taken and work done towards eliminating, as far as possible, the sources of this cup defect. While it may not be possible to remove it completely, a reduction in the incidence of the defect would probably improve significantly the market value of the entire crop.

Since this question has immediate relevance not only to Rwanda, but also to Burundi, Uganda, and Eastern Congo, it is recommended that a joint approach be taken to this problem. The objectives would be:

- to isolate the cause of the potato taste.
- to identify a test area in Rwanda in which an attempt would be made completely to eradicate this cup defect.
- to implement a programme to achieve this result over a 2 – 3 year period, and to devise a methodology which could be used in neighbouring countries and other areas of Rwanda for this purpose.

16.8 RADIO PROGRAMMES FOR DISSEMINATION OF INFORMATION TO FARMERS

The radio has been put to very effective use in passing information to a very wide audience on health issues in Rwanda. Programmes have been prepared in the setting of a Rwandan family's daily life, into which are introduced the key themes and issues on which it is sought to 'educate' the listeners.

Among the farming community, there are many who listen regularly to the radio. In discussions with OCIR Café staff a scheme has been outlined for the preparation of a series of radio programmes, prepared in Kinyarwanda, based round the life and 'story' of a family in a rural village involved with coffee production. The integration of the 'education' part of the programmes into the drama and comedy of the life of a village family has been shown to be an effective means of communication.

It is proposed that funding be made available through OCIR Café, working with agriculturists and university students in the appropriate departments (drama etc.) to write and then prepare the series of programmes for this purpose. The proposed budget includes the transmission of 24 programmes, each of 30 minutes, including the cost of 'air-time' from the local radio stations.

During the course of this exercise, the acceptance by audiences, and some measurement of numbers would be made, to assess the effectiveness of the measure. If it were found to be popular and effective, then further funding could be sought to develop the idea further.

Details of the costing of the proposal are set out in Appendix V.

17.0 INSTITUTIONAL FRAMEWORK FOR TRANSITION OF CDM AND EXTENSION SERVICES TO PRIVATE OWNERSHIP

At present, the CDM and extension Services come under the control of OCIR Café, the statutes of which were originally drawn up in 1964, and were designed for an organisation to oversee a coffee industry which was controlled from the farmer through to export.

With the move towards privatisation, there are certain aspects of OCIR Café's activities and structure which do not lend themselves to this new environment. In addition, the income stream available from coffee available for covering OCIR Café's budget is drastically lower, given the smaller crops, and the lower world market prices. OCIR receives 3% of the FOB Mombasa price of the coffee. The revenue expected from this 3% for 2000 was expected, according to the budget, to cover less than 50% of the annual budgeted expenditure.

In 1994 a report was submitted, 'Synthèse de Propositions de Reforme de la Filière Café' which included proposals for the restructuring of OCIR Café. In 1998 APROMA made a detailed study of the industry, and made proposals in a report, submitted towards the end of that year, for a restructuring of OCIR Café. The proposals in both these reports followed similar overall lines, though the Aproma report went further than the 1994 document.

A ‘Projet de Loi’ has been drafted for the re-organisation of OCIR Café, and this is at present under consideration. There are alternative approaches as to how the restructuring might be achieved, but it is important to establish from the outset the objectives to be reached in

making the changes.

It is proposed that consideration be given to dividing OCIR Café's activities between the regulatory functions, including monitoring and statistics, quality, and liaison with research on the one hand, and the extension and commercial activities on the other. This would require a separation of the two parts of the organisation, with a view to the regulatory function being financed out of part of the 3% levy made on exports, while the extension and commercial functions would, under a separate organisation, move towards a commercial basis for operation over a 5 – 7 year period.

There is the need to define how best to achieve the transition from the present organisation to that which will best serve the needs of the industry for the future, both for the GOR's regulation of the industry, as well as the changing needs of the liberalised market participants. The senior management of OCIR Café meets each week during the season with representatives of the private sector to discuss primarily pricing issues, but also other industry matters. It is recommended that a joint committee be formed, with representatives of GOR, OCIR Café, and the industry, with a view to defining the objectives and organisational structure appropriate to the new environment, and working out a programme to achieve the goals set.

18.0 OUTLINE OF PROJECT PROPOSAL

The various options and proposals outlined above envisage some major changes in the industry in the coming 5 - 10 years. It is important that before committing to a particular strategy, there be opportunity to test that strategy in the field, to determine its acceptance by the growers, processors and market participants, as well as its commercial viability. This is as true of the commercial sector approach to CWS, as to the privatisation of the CDM units, and the proposals in other areas.

The outline below of areas to be financed highlights the principal items for consideration. The estimated budgets are based on provisional figures, and could be extended or reduced, according to the goals to be achieved in each area. They have been separated, rather than consolidated into one major project, since the funding for the different areas is likely to be found from different sources.

18.1 AREAS TO BE FINANCED

TOTAL FINANCE FOR NEW CWS	**US$ 540,000**
TOTAL FOR SUPPORT OF CURRENT AND NEW CWS	**US$ 165,000**
TOTAL FOR TECHNICAL INFORMATION FOR CWS AND MPS	**US$ 33,000**
TOTAL FOR TRAINING OF EXTENSION STAFF	**US$ 40,000**
TOTAL FOR PILOT 5 MPS	**US$ 143,000**
TOTAL COST 100 CDM UNITS	**US$ 485,000**
TOTAL FOR IMPORT 'BABY BENTALL' DRUM PULPERS	**US$ 28,000**
TOTAL FOR LIQUORING TRAINING OCIR AND EXPORTER STAFF	**US$ 28,500**
TOTAL TRIAL CONSOLIDATION SMALL-HOLDINGS	**US$ 106,000**
TOTAL FOR ASSISTANCE TO WOMEN'S GROUPS	**US$ 30,000**
TOTAL FOR ISAR FOR PLANT IMPROVEMENT	**US$ 126,000**
TOTAL RADIO PROGRAMMES	**US$ 35,000**
TOTAL FOR RESEARCH ON 'POTATO TASTE'	**US$ 204,000**
TOTAL FOR ESTABLISHMENT WORKSHOP	**US$ 127,000**
TOTAL FINANCING REQUIREMENT	**US$ 2,090,500**

18.2 ANALYSIS OF BUDGETED EXPENDITURE

18.2.1 Finance for new CWS

Finance for 4 units at $ 125,000 per unit (60%)	US$ 500,000
Technical assistance for design of loan agreements between CFC and commercial banks , and then from commercial banks to entrepreneurs, monitoring the initial stages of the arrangements and setting in place of the agreements	US$ 40,000
Total finance for new CWS	**US$ 540,000**

Out of which **$ 500,000** would be loans, repayable over 5 – 6 years

As mentioned in Para. 10, these funds to be made available through the commercial banking system, but as long-term loans in Rwanda Francs, with a rate of interest of 6 - 8% per annum, secured against the CWS themselves. This seems the most likely way to attract private sector investment into this area, with a view to making a realistic test of the systems and markets, to establish the longer-term viability of such operations for a wider group of potential investors. It would also serve as a means of training staff in CWS management and control, both in financial terms as well as quality and production.

After a 2 - 3 year period, provided the first CWS had been shown to be profitably, a larger fund could be made available to develop this programme further. The provision of a T.A. component, mainly for training and assistance in the organisation of farmers supplying the CWS could make a singificant impact on the speed of take-up by potential investors in the CWS.

18.2.2 Support for current and new CWS

T.A.	8 CWS, 4 visits, each 2 days – say 2 man/months	US$ 48,000
	OCIR Café staff assisting - 4 man-months	US$ 12,000
Manuals, training materials, on site training		US$ 36,000
OCIR Café staff training		US$ 15,000
Travel costs		US$ 4,000
Transport costs		US$ 6,000
Marketing support – trade fairs, publicity materials etc		US$ 48,000
Total for Support of current and new CWS		**US$ 165,000**

The objective here would be to training OCIR Café staff as trainers, as well as equipping the staff of the new CWS over a period of 6 - 8 months, in techniques of production management and quality control, as well as financial management aspects of the CWS.

18.2.3 Technical information for CWS and MPS

T A – 1 man/month	US$ 12,000
- 6 man/months Kigali	US$ 18,000
Materials and printing etc	US$ 3,000
Total for Technical information for CWS and MPS	**US$ 33,000**

The objective would be to provide OCIR Café with a full set of trechnical drawings and training manuals for building, managing and running CWS as well as MPS.

18.2.4 Training courses for Agronomes

Estimated cost for each course $ 10000	
4 courses over 18 month period	US$ 40,000
Total for training of Extension Staff	**US$ 40,000**

During the transition period, as the market moves towards a greater degree of liberalisation, including the extension services, the further training of the extension service staff of OCIR Café will be essential. This training will include not only technical training in agricultural practice, but also the use and application of inputs, as well as marketing of inputs, and financial management for the small farmer, as well as the extension staff themselves.

18.2.5 Pilot test of 5 Mini-Pulping Stations

Machinery including ancillary equipment			
	$ 20,000 x 5 units		US$ 100,000
T.A.	2 man/months	$ 20,000	
	6 man/months	$ 18,000	US$ 38,000
Transport and other services			US$ 5,000
Total for pilot 5 MPS			**US$ 143,000**

Out of this amount, an estimated **$ 100,000** would be loans, repayable over a 3 – 4 year period, covering the cost of the machinery and its installation. The purpose would be to establish the technical capacity of this new machinery, and whether the quality produced meets market requirements, to establish the premiums which might be obtained for the coffee so produced, and to confirm the economic viability of such units., including questions related to ease of management, as well as environmental issues.
Once these points had been demonstrated, it is anticipated that a large number of such units would be installed across the country, making a significant impact in improving quality and productivity.

18.2.6 Privatisation of 100 CDMs

Spare parts and equipment	FRW 200,000
Enclosure of machinery/security	FRW 200,000
Roofing and locks etc, store	FRW 200,000
Miscellaneous tools etc.	FRW 150,000
	FRW 750,000
Supply of inputs – fertilisers	FRW 500,000
- pesticides	FRW 300,000
- ancillary equipment	FRW 150,000
Total	FRW 1,700,000

Equivalent value in U S dollars US$ 4,850/unit

Out of which an estimated $ 3420 recoverable over 3 years.

Total cost 100 CDM units	**US$ 485,000**

Out of the total sum of US$ 485,000, it is estimated that an amount of US$ 342,000 would be recoverable over a 3 - 4 year period. This would be in the form of start up loans to the groups taking over the CDM's, and a mechanism would need to be identified for the recovery of these loans.

Once the models had been developed for the hand-over of these CDM's, it is anticipated that over a 5 year period, most of the remaining CDM's would likewise be privatised.

18.2.7 Import and sale of 'Baby Bentalls'

Cost of machines £ 130 each FOB UK @ $1.50/£ US$ 195 x 100 machines	US$ 19,500
Freight and costs from UK to Kigali £ 1,680	US$ 2,500
Distribution costs	US$ 6,000
Total for import 'Baby Bentall' drum pulpers	**US$ 28,000**

It is anticipated that in order to sell these machines, it would be necessary to give credit facilities of 12 - 24 months to buyers. It is expected therefore that the full amount of US$ 28,000 would be recoverable over a 1 – 2 year period from sale of the machines

18.2.8 Liquoring and quality training, OCIR Staff

2 trainees from OCIR Café to Kenya or Ethiopia for 2 months	
Travel costs	US$ 2,000
Per diem for 2 months	US$ 6,000
4 trainee liquorers from exporting companies to	
Kenya or Ethiopia for 2 months	US$ 16,000
1 trainee to Europe	
Travel costs	US$ 2,000
Per diem	US$ 2,500

Total for liquoring training OCIR and exporter staff	**US$ 28,500**

The key to quality is in the cup. It is vital that the liquoring capability within the industry be strengthened and built up. This would provide an start to such capacity building. It might also be appropriate to seek a liquorer to come to Kigali for a 12 - 24 month period specifically as a trainer for the industry.

18.2.9 Consolidation of small-holdings

Trial to be carried out in two locations, including	
Training of both farmers and extension staff concerned	
T A 5 man/months over 3 year period	US$ 50,000
12 man/months Kigali	US$ 36,000
Planting material and inputs	US$ 5,000
Ancillary equipment	US$ 5,000
Transport and other costs	US$ 10,000

Total trial consolidation small-holdings	**US$ 106,000**

The development of a model for the consolidation of small-holder plots of coffee into more viable economic units seems to be an important factor in the long-term future of the industry in Rwanda. With competition for land for food crops, coffee will only continue to be cultivated if farmers perceive the economic advantage from this crop.

18.2.10 Assistance to women's groups

T A for assistance to women's groups	US$ 30,000

Total for assistance to women's groups	**US$ 30,000**

Since nearly one quarter of all coffee growing households are headed by women, it is proposed that work be done in one or two communes to develop a programme to assist such households, and to devise methods which would assist them to improve their coffee production.

18.2.11 Assistance to ISAR – plant improvement etc

T A 6 man/months plant breeder over 2 year period	US$ 60,000
ISAR staff, allowances etc	US$ 30,000
Travel and other costs	US$ 6,000
ISAR CWS – rehabilitation costs	US$ 30,000
Total for ISAR for plant improvement	**US$ 126,000**

In the long-term, research on improved disease-resistant varieties, as well as quality control and production management in the field and factory, will play a vital role in the economic viability of the industry. This modest sum provides a very limited start to move forward work in coffee in the area of research, and would need to be backed up with further funding later.

18.2.12 Radio programmes

Estimate of cost according to schedule (Appendix V)	US$ 25,000
Evaluation and follow up reporting	US$ 10,000
Total radio programmes	**US$ 35,000**

As a means of reaching a wide audience, radio is unique in its capacity to attract the attention of rural listeners, and to provide a platform for education. Coffee lends itself readily to such broadcasts, being of interest, as it is, to such a wide cross-section of the population.

18.2.13 Potato taste – research programme

12 man/months of research work over 2 year period	US$ 72,000
24 man/months local information gathering/research	US$ 72,000
2 year trial project, ancillary costs	US$ 60,000
Total for research on 'potato taste'	**US$ 204,000**

The problem of potato taste adversely affects not only Rwanda, but also Burundi, Uganda and Eastern Congo, and a project which encompassed research from all four countries could be greatly beneficial for all of them in inreasing the value of their arabica coffee exports.

18.2.14 Establishment of workshop - pulpery maintenance

Cost of equipment for reconditioning pulper discs	US$ 25,000
Cost of ancillary workshop equipment	US$ 20,000
Cost of initial stock of spare parts	US$ 30,000
Cost of 2 vehicles for on site visits and maintenance	US$ 40,000
T.A. -for initial set up of workshop and management systems	US$ 12,000
Total for establishment workshop	**US$ 127,000**

The establishment of a local capability for the refurbishment of pulper discs, as well as the ability to visit CDM and CWS sites and make repairs will be critical to maintaining good quality standards from these installations. It is proposed to provide this funding either through an NGO or to a private sector operator, with a view to establishing an independent and economically viable unit for this purpose for long-term sustainability. Of the $ 127,000, it is estimated that about $ 100,000 would be in the form of a 2 year loan (in Rwanda Francs).

18.3 TARGETS FOR NEXT 7 YEARS IN TERMS OF PRODUCTION PROCESSING:

18.3.1 Situation as at April 2000		
	Units	**% of production**
C W S	2	1
M P S	0	0
C D M/OCIR	1380	58
CDM/Privatised	0	0
Drum pulper	2070	17
New drum pulper	0	0
Locally made drum	2102	10
Mortar & pestle		14
Total		100%

18.3.2 Target by April 2002		
	Units	**% of production**
C W S	7	7
M P S	5	2
C D M/OCIR	1200	53
CDM/Privatised	100	7
Drum pulper	1850	13
New drum pulper	100	4
Locally made drum	1500	6
Mortar & pestle		8
Total		100%

18.3.3 Target by April 2007		
	Units	**% of production**
C W S	25	20
M P S	80	13
C D M/OCIR	0	0
CDM/Privatised	1200	40
Drum pulper	800	10
New drum pulper	500	10
Locally made drum	300	5

Mortar & pestle	2
Total	100%

18.4 CRITERIA FOR ASSESSING THE SUCCESS OF THE PROJECT

The actual measurement of the results of the project are set out in Para.2.7 of this report, but in broader terms, there should be the following points covered in the measurement of the results:

- Premium achieved in the market for fully washed coffee
- General improvement in crop quality - reduction in percentage of 'ordinary', and increase in percentage of higher grades
- Improvement in average parchment to clean coffee yields as reported by usiniers/exporters
- Improved community relations
- Increase in productivity of existing plantations, as reflected in increasing exports
- Improvement in average farmer incomes from the same number of coffee trees.
- Confirmation of no negative impact on the environment from the new CWS
- Increase in percentages of coffee handled through CWS and CDM's, and reduction in the information sector pulping.

LIST OF PEOPLE INTERVIEWED

Hon.Dr. E. Kabaija, Minister of Agriculture, Animal Resources and Forestry, Kigali
Hon A. Makuba, Minister of State of Agriculture, Animal Resources and Forestry, Kigali
Mr. A. Nzirasanaho, Director, OCIR Café, Kigali
Mr. Ephrem Niyonsaba, Cher de Service Production, OCIR Café, Kigali
Mr. Léon Haguma, Chef de Service Commercial, OCIR Café, Kigali
Mr. Jean Bahizi, Chef de Laboratoire, OCIR Café, Kigali
Mr. Zacharie Manirarora, Chef de Section, Production, OCIR Café, Kigali
Mr. Pontien Munyakera, Projects Department, OCIR Café, Kigali
Mr. P Msemakweli, Technician on Coffee Processing, OCIR Café, Kigali
Dr. Ntegeyibisaza, Regional Service Director, OCIR Café, Kibuye
Mr. L. Kanzeguhera, Coffee production specialist, Mubanza
Mr. M. Abimana, Bourgemestre, Commune Mubanza
Mr. J. Bizimana, Head of Coffee Research, ISAR Research Centre, Butare
Mr. F. Nyibizi, Factory manager, Masaka CWS, Masaka
Dr.S. Hambarukize, President, UPROCA Cooperative, Gisenyi (Nkora CWS)
Mr. E. Bizimana, Financial adviser, UPROCA Cooperative, Gisenyi
Mr. M. Habumugisha, Factory manager, Nkora CWS, Nr. Gisenyi
Mr. F Kanimba, Senior Economist, World Bank Resident Mission, Kigali
Mr. M. De Cuypere, Director General, Banque de Kigali, Kigali
Mr. J M Vianney Nyirimihigo, Director General, Banque Rwandaise de Développement, Kigali
Mr. F Kabandahe, Commercial Director, Banque Commerciale du Rwanda, Kigali
Mr. E. Safari, Resp. Engagements Etrangers, Banque Commerciale du Rwanda, Kigali
Mr. Ange Niyibizi, Union de Banques Populaires du Rwanda, Kigali
Mr. A. Vigneron, Managing Director, Rwandex, Kigali
Mr. M. Ndoba, Director General, SICAF, Kigali
Mr. J P Rwagasana, Director, SICAF, Kigali
Mr. A Mutambuka, Assistant Director, SICAF, Kigali
Mr. Hatari Sekoko, Director General, Agro Coffee Industries, Kigali
Mr. Kwany, Director General, Rwacof, Kigali
Mr. P Ravi, Commercial Manager, Rwacof, Kigali
Mr. Vianney Nkusi, Managing Director, Sopro Café, Kigali
Mr. A. Houyoux, PASAR Project, Ministry of Agriculture, Kigali
Dr. Menyuwellet Moussie, Chef de Section Agriculture et Sécurité Alimentaire, USAID, Kigali
Mr. Y Willaert, Resp. Cellule de Sécutiré Alimentaire, European Union Delegation, Kigali
Mrs. K Nordin-Olsson, Counsellor Development Cooperation, Embassy of Sweden, Kigali
Mr. Thomas Gibb, Monetisation Programme, ACDI/VOCA, Kigali
Mr. Paul Delucco, Rwanda Representative, ACDI/VOCA, Kigali

LIST OF ABBREVIATIONS

ACDI/VOCA	Agricultural Cooperative Development International
BRD	Banque Rwandaise de Développement
CFC	Common Fund for Commodities, Amsterdam
CDM	Centre de Depulpage Manuel (Manual Pulping Centre)
CWS	Coffee Washing Station
GIC	Groupement d'Interet Commun (Common Interest Group)
GOR	Government of Rwanda
ICO	International Coffee Organisation, London
ISAR	Rwanda Agricultural Research Institute
MPS	Mini-Pulping Station
NGO	Non-Governmental Organisation
OCIR Café	Office des Cultures Industrielles du Rwanda - Café

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APPENDIX